TECHNOLOGY REVIEW

May 1952

technology
review
Published by MIT

The Vulcan organization in Cincinnati has been serving the process industries over the past half century. In 1952 American industry will be called upon to bolster the country's defenses while meeting a steady load of essential civilian demands. In fulfilling these responsibilities, Vulcan is available with its technically-trained staff and specialized facilities to help solve many difficult processing problems.

VULCAN ENGINEERING DIVISION OFFERS:

- TECHNICAL AND ECONOMIC SURVEYS
- PROCESS DEVELOPMENT
- PROCESS AND PLANT DESIGN
- EQUIPMENT DESIGN AND PROCUREMENT
- ERECTION AND CONSTRUCTION
- INITIAL OPERATION SERVICES

A few of the specialized fields in which Vulcan process engineering services have been utilized include:

- Organic chemicals
- Petro-chemicals
- Pharmaceuticals
- Low-temperature gas separation
- Waste disposal
- Chemical recovery
- Extraction and diffusion operations

Write for explanatory literature, or better still have a Vulcan representative call to see you.

VULCAN ENGINEERING DIVISION

The VULCAN COPPER & SUPPLY CO., *General Offices and Plant,* CINCINNATI 2, OHIO

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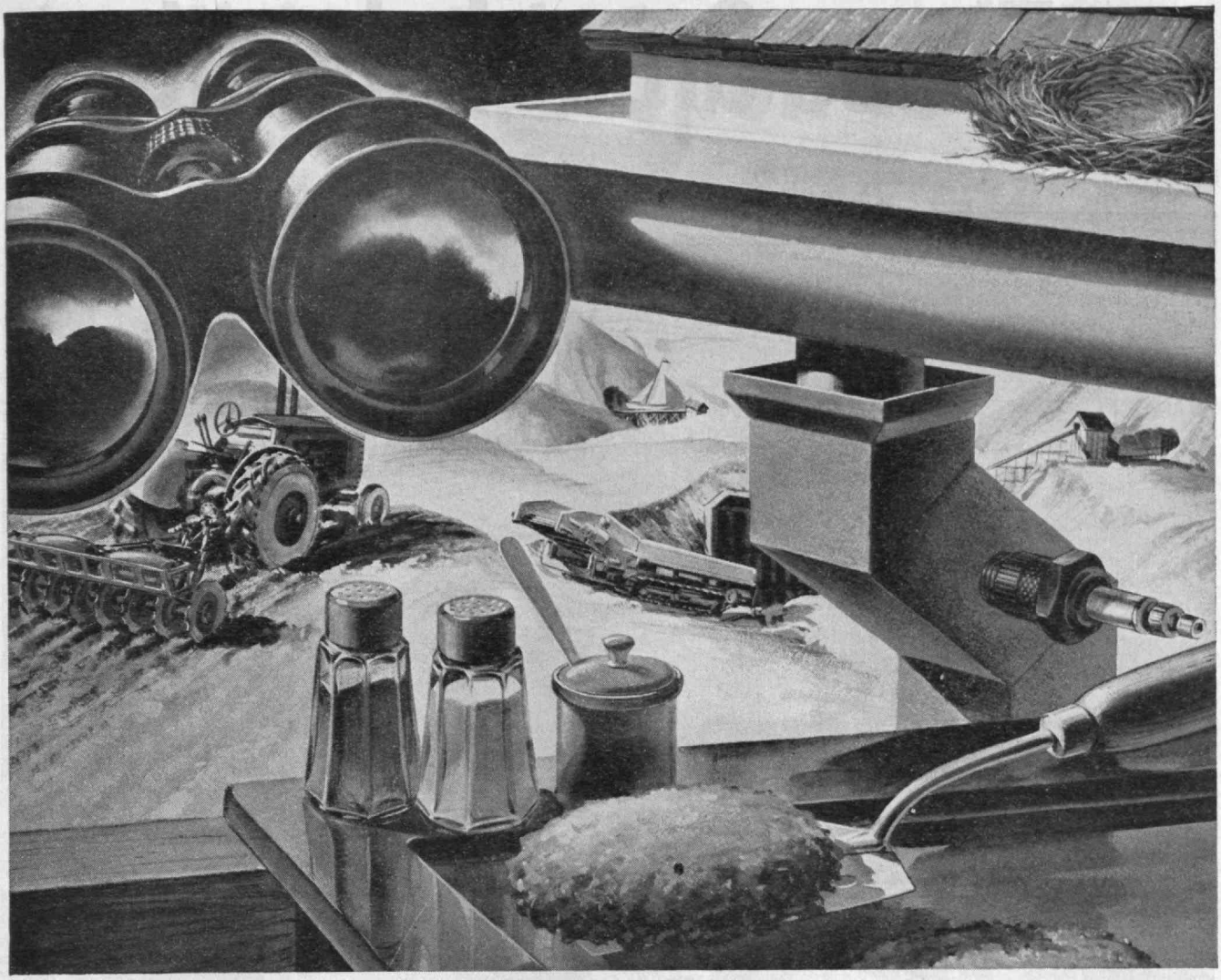
VICKERS VULCAN PROCESS ENGINEERING CO., LTD., MONTREAL, CANADA

51 YEARS OF SERVICE

ENGINEERING DIVISION • MANUFACTURING DIVISION • CONSTRUCTION DIVISION • INDUSTRIAL SUPPLY DIVISION



All but one of the objects in this picture have something in common — Norton or Behr-Manning abrasive products are vital factors in their manufacture and in their quality. ***Can you find the stranger?***

What doesn't belong in this picture?

The electric mine car? No! In this new device, for hauling loads through narrow pits, Norton abrasives are essential to the manufacture of almost every part.

The harrow? No! Its concave discs are "roughed and polished" with Behr-Manning RESINALL METALITE belts.

The binoculars? No! Their lenses were shaped by Norton diamond wheels on automatic-lens generating machines. Other parts were also precision ground by Norton abrasive products.

The hamburgers? No! The machines that grind them are deburred, in casting form, with Behr-Manning coated abrasives. Even the surface on which they are frying is cleaned with a Norton ALUNDUM griddle brick.

The stranger in the picture is the bird's nest. Any man-made product — whether of metal, wood, paper, cloth, leather, ceramics, plastics — depends in some important way on products that bear such well-known trade-marks as Norton and Behr-Manning.

Norton Company** makes abrasives, grinding wheels, refractories, Norbide grain and molded products, grinding and lapping machines, non-slip floors.* ***Norton Company, Main Office and Works, Worcester 6, Massachusetts.

Behr-Manning** makes abrasive paper and cloth, oilstones, abrasive specialties, Behr-Cat brand pressure-sensitive tapes.* ***Behr-Manning Corporation, Division of Norton Company, Troy, New York.

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NORTON BEHR-MANNING

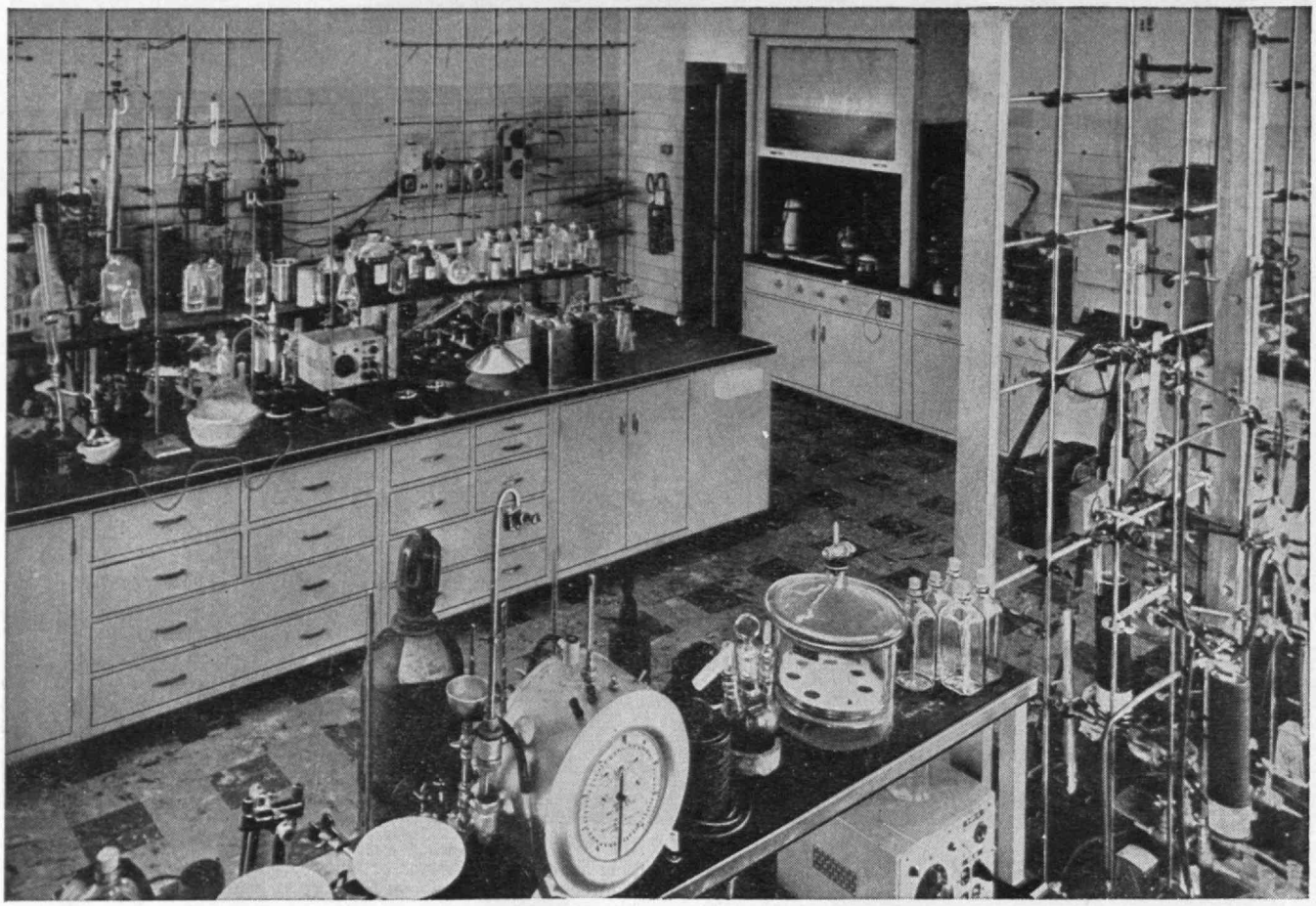
NORTON COMPANY BEHR-MANNING

WORLD'S LARGEST MANUFACTURERS OF ABRASIVES AND ABRASIVE PRODUCTS

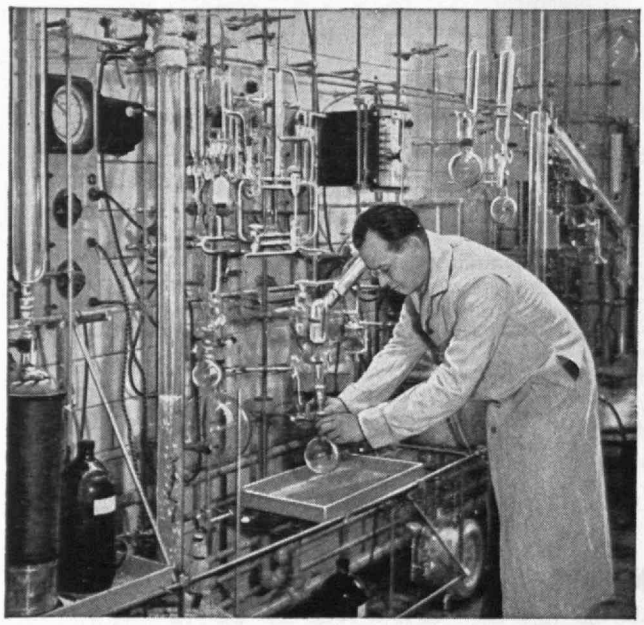
MAKING BETTER PRODUCTS TO MAKE OTHER PRODUCTS BETTER

THE TECHNOLOGY REVIEW, May, 1952, Vol. LIV, No. 7. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription $3.50; Canadian and Foreign subscription, $4.00. Entered as second-class matter December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.

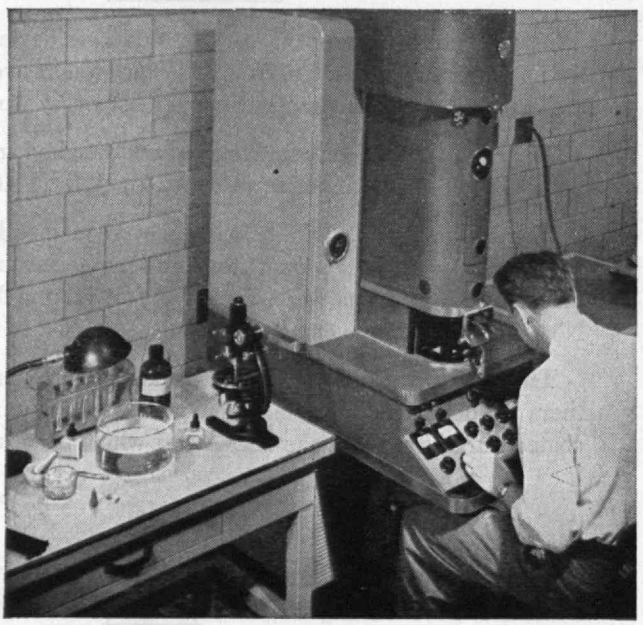
These Great Laboratory



PETROCHEMICALS offer independent inventors great opportunity for exploration and reward. Such synthetics as Nylon, Vinylite, Neolite are already indispensable to our expanding economy—and new ideas in this area are at a premium today.



UNDER THE SINCLAIR PLAN, chemistry laboratories like these are open for the first time to independent inventors.



ELECTRON MICROSCOPE, capable of magnifying 100,000 times, is typical of the expensive equipment now available.

Facilities Are Open to You

Many inventive people have responded to the Sinclair Plan's offer of laboratory facilities — to others who wish to do so, a suggestion: There is promise and profit in oil-based synthetics.

EIGHT months ago, Sinclair turned over a part of its great laboratories at Harvey, Illinois, to independent inventors who had promising ideas in the field of petroleum products but who did not have the facilities needed to develop or prove out their ideas.

To date nearly 5,000 people have submitted ideas to the laboratories, and the Plan is recognized as a valuable service to independent inventors. As a result we have made the Sinclair Plan part and parcel of the long-range operation of our company.

There may be inventive people interested in this Plan but wondering what sort of ideas or what areas would be profitable to explore. To those people we suggest the field of petrochemicals. Such things as plastics, synthetics, substitutes and new materials as yet undeveloped—made from petroleum—offer great opportunities for invention and reward.

If you have an idea of this sort—or in the general area of petroleum products or applications—you are invited to submit it to the Sinclair Research Laboratories. In your own interest, each idea must first be protected by a patent application or a patent.

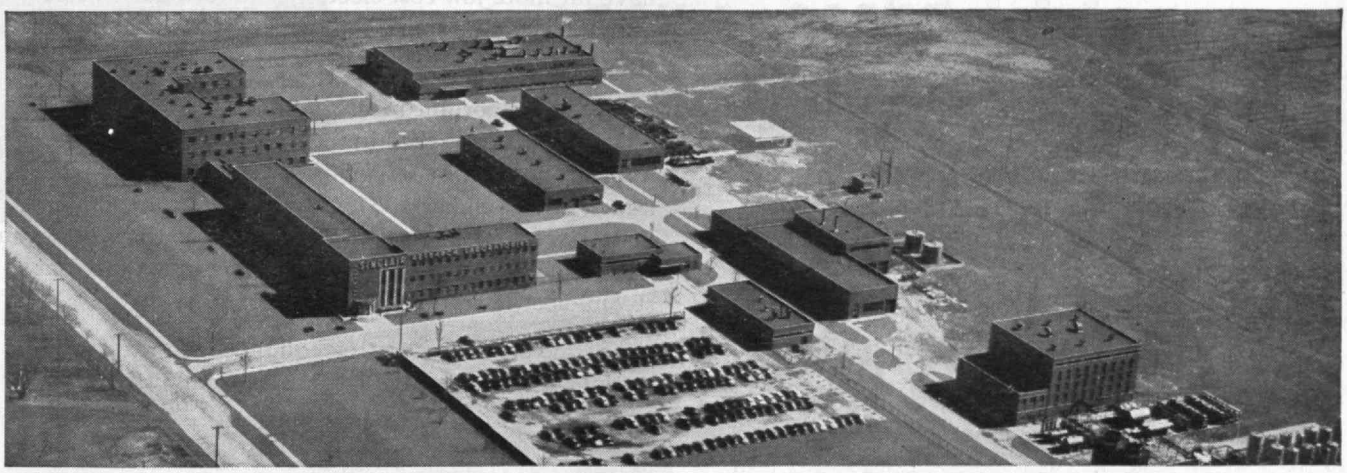
The inventor's idea remains his own property

If the laboratories select your idea, they will make a very simple arrangement with you: In return for the laboratories' work, Sinclair will receive the privilege of using the idea for its own companies, free from royalties.

This agreement in no way hinders the inventor from selling his idea to any of the hundreds of other oil companies for whatever he can get. Sinclair has no control over the inventor's sale of his idea to others, and has no participation in any of the inventor's profits.

HOW TO PARTICIPATE: Instructions are contained in an Inventor's Booklet available on request. Write to: W. M. Flowers, Executive Vice-President, Sinclair Research Laboratories, Inc., 600 Fifth Avenue, New York 20, N. Y.

IMPORTANT: *Please do not send in any ideas until you have sent for and received the instructions.*



SINCLAIR RESEARCH LABORATORIES—nine buildings containing the most modern testing equipment known—have contributed many of today's most important developments in petroleum. Under the Sinclair Plan, the available capacity of these great laboratories is being turned over to work on the promising ideas of independent inventors everywhere.

SINCLAIR—for Progress

• *A Source of Carbon for Steel*

• *Gives Paint Its Jet Glossiness*

• *Triples Tire Life*

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For Best Quality Blacks,
In the Widest Range
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LOOK to CABOT . . .
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• *Essential to Carbon Papers and Ribbons*

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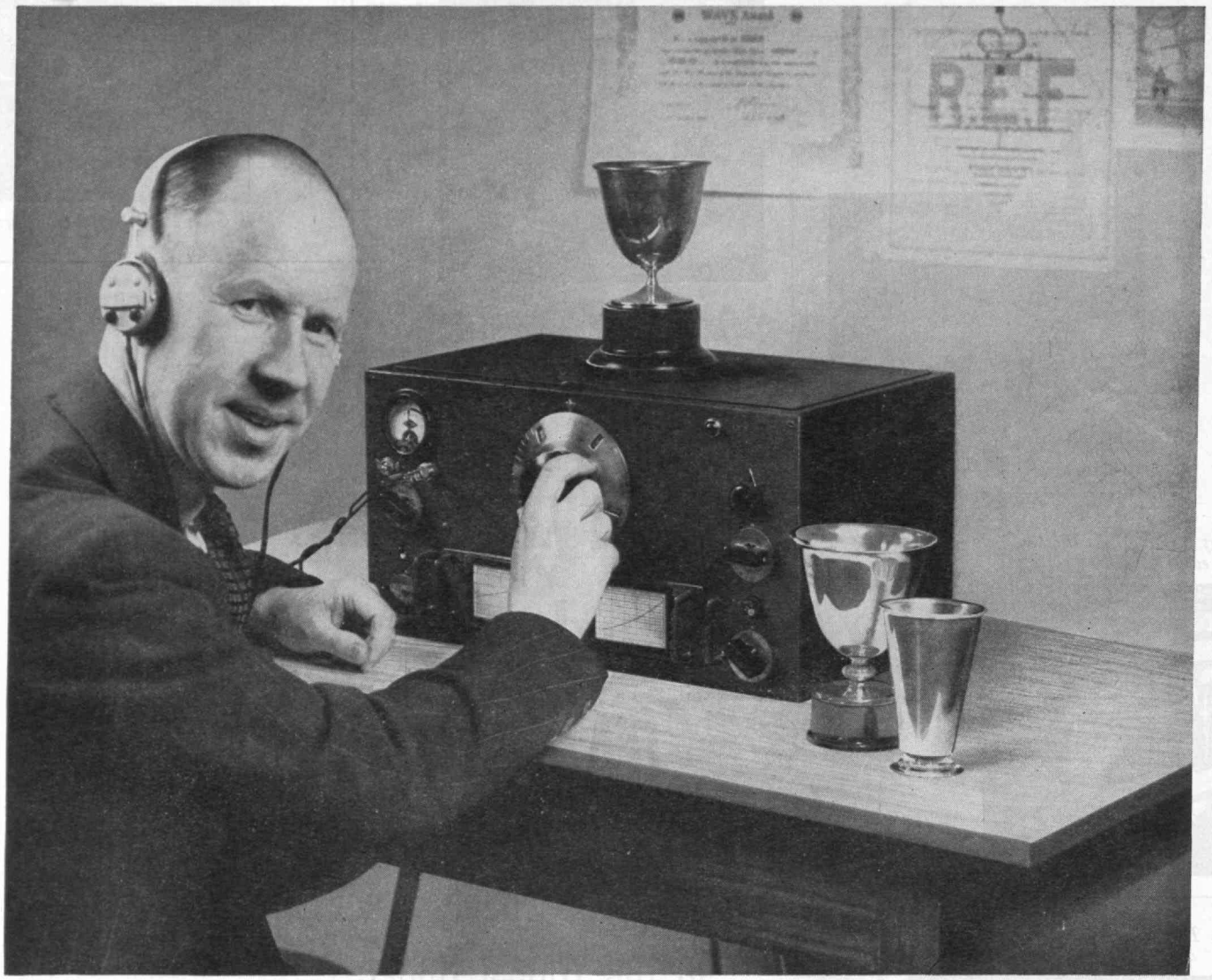

17 Years of Prize-Winning Performance

To paraphrase a well-known quotation,
"Old HRO's never die!" Nor, may we hasten to add, do they "fade away."

In 1934, the year he got his amateur license, Gerard de Buren, HB9AW (Geneva), FP8AW (St. Pierre and Miquelon), purchased an HRO. He's still using it with prize-winning results. In 17 years, his HRO has helped him win one amateur award after another. Just this year, on St. Pierre and Miquelon Islands, he worked 1285 stations in 53 countries in 35 days!

Enduring performance like this is built into every National product.

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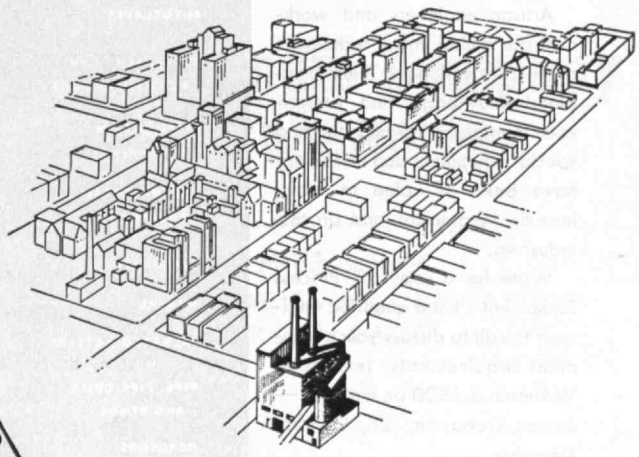
STEAM CENTER for a Medical Center

The new steam center of the Medical Center Steam Company, serving the University of Illinois and others in the Medical Center Area in Chicago provides a single, economical and reliable source of steam for all buildings in the group.

Three boilers, each with a capacity of 90,000 pounds per hour, distribute steam through underground pipes laid in 4600 feet of tunnels. Provision has been made for future expansion.

The steam plant and distribution system were designed and constructed by Stone & Webster Engineering Corporation.



STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY *of* STONE & WEBSTER, INC.

THE TABULAR VIEW

Personal Writing Implements. — Progress in personal pencraft property is piquantly portrayed (page 357) by FREDERIC W. NORDSIEK, '31, whose pen is perennially put to paper for the perusal of Review readers. Mr. Nordsiek's writing proclivities were proclaimed by his appointment as editorial associate of The Review in 1944. As a graduate of Course VII, Mr. Nordsiek's professional training is in biology, but he has had extensive and varied experience in research and administration in food and related fields as well. Since last summer, he has been engaged in the research program of the American Cancer Society.

Of Yankee Granite. — When history decreed that the Battle of Bunker Hill be commemorated, it was but natural that materials indigenous of the region be selected. How the great gray obelisk came to be made of Yankee granite is recorded (page 359) by E. H. CAMERON, '13, whose frequent writings for The Review reflect a good sprinkling of history, personal relations, and engineering. The first of Mr. Cameron's two-part article deals with the preparation for the famous monument and appears in this issue; the second part will appear in the June issue, to mark with appropriateness the 110th anniversary of the completion of the Charlestown needle. Mr. Cameron is a civil engineer by training and long experience, but during the last decade has been engaged by his firm, Jackson and Moreland — consulting engineers, as head of their Technical Publications Division. His articles in The Review have provided a clear insight into the lives and technological progress of our grandfathers.

Made in Japan. — At the invitation of the Supreme Commander for the Allied Powers, and with the able assistance of an executive officer from the Unitarian Service Committee, 15 representatives of engineering education in the United States visited Japan last summer. Members of the Engineering Education Mission to Japan were invited to discuss revitalization of postwar Japanese technical education and technology, but apparently the visitors learned at least as much as their hosts. PROFESSOR HAROLD L. HAZEN, '24, headed this Mission and his article (page 351) represents a personal recollection of some outstanding events rather than the collective report of the Mission members. His article gives ample evidence that however hard the members of the Mission worked, there was time for pleasant excursions into the byways and folkways of Japanese culture. A more extensive biography of the author than can be given here appeared in the March, 1952, issue of The Review which recorded Professor Hazen's appointment as Dean of the Graduate School, upon the retirement of John W. M. Bunker, present Dean. For the illustrations used in "America Meets Japan in Engineering Education," The Review is indebted to another Mission member, Professor Albert G. H. Dietz, '32, of the Department of Building Engineering and Construction.

MAIL RETURNS

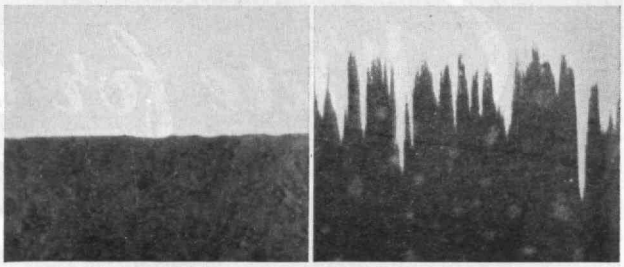
Exaggerated Edges

FROM LEO P. TARASOV, '37:

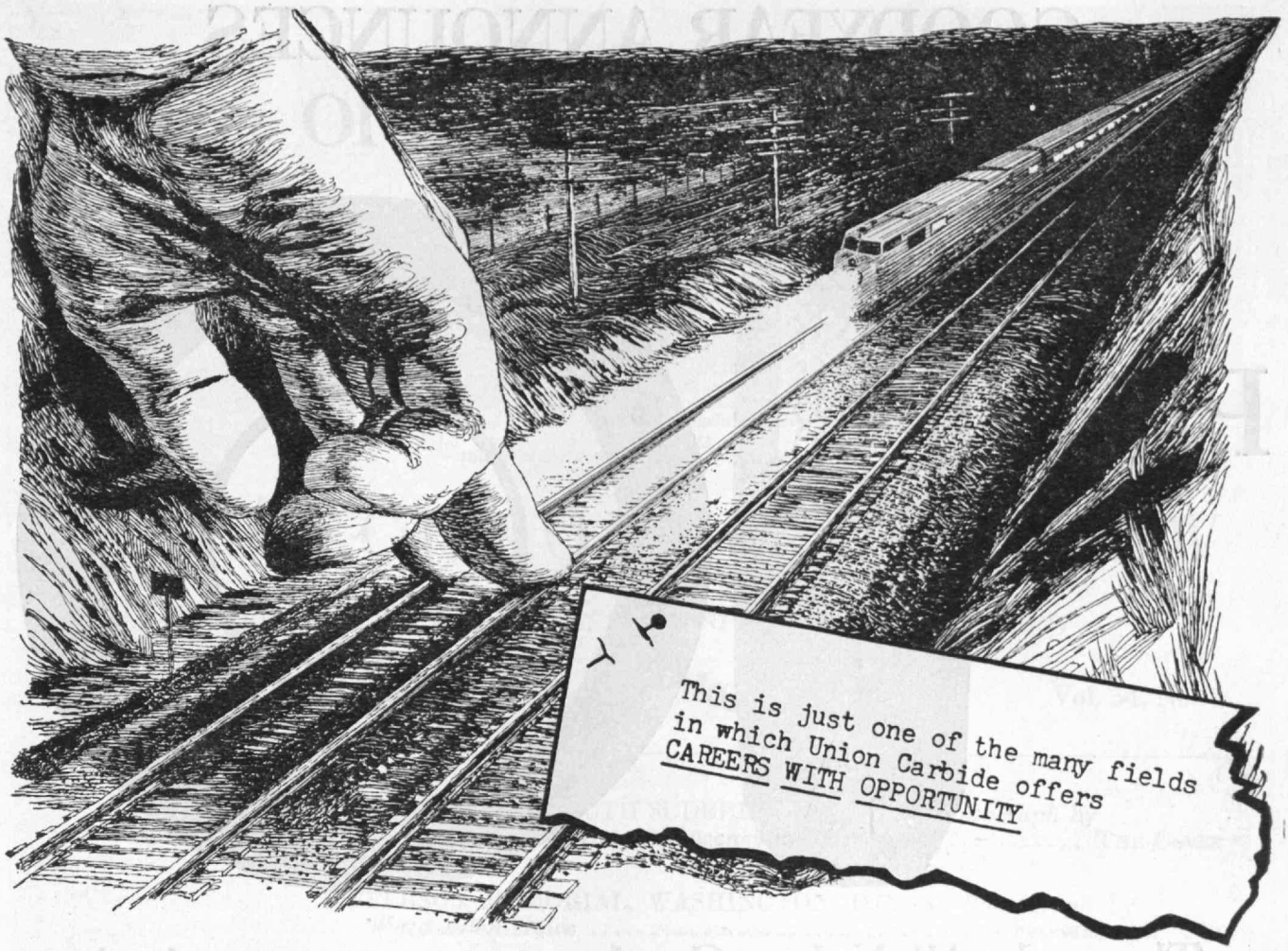
It was most interesting for me, as one who is active in metal-cutting research and familiar with the M.I.T. work in this field, to read Professor Shaw's article, "The Renaissance in Metal Cutting," in the March, 1952, issue. This article should attract the attention of men in responsible industrial positions who are not aware of how much can be done to improve metal-cutting operations by way of fundamental research and proper teaching.

From the standpoint of the grinding industry, it is unfortunate that the caption for Fig. 5 may mislead the casual reader into thinking that ground surfaces are inherently rough. Actually, a good ground finish, such as is illustrated, is very smooth, the roughness being of a very gently undulating character. The photomicrograph shown in Fig. 5 is that of a taper section cut nearly parallel to the ground surface in order to purposely exaggerate the roughness many times by providing a very much greater magnification in the vertical direction than in the horizontal. Although this is stated in the text, a reader who is not familiar with taper sections may well forget about the explanation in the text and remember only the picture and its caption. To illustrate this point clearly, two photomicrographs are reproduced below with captions that are believed to be completely descriptive.

Worcester, Mass.



Real appearance of an ordinary cross section cut perpendicular to the grinding scratches, shown at a magnification of 500 times (left); *highly exaggerated appearance as developed by a taper section — with a horizontal magnification of 500 times and vertical magnification of 12,500 times* (right).



Clearing the track of clickety-clack

You can ride in comfort on longer-lasting rails because the song of the track is being stilled

Like the paddleboat whistle on the river, the clickety-clack of wheels on rails is on its way to becoming a memory.

This familiar clatter and chatter has been like music to some of us when we travel. But it's been a headache to others . . . particularly our railroads.

Wheels pounding on rail joints cause jolting and wear as well as noise. And wear means expensive repair or replacement of rails and the bars that connect them.

ELIMINATING RAIL JOINTS—"Ribbonrail" is becoming important news because it provides a way to solve the high cost of joint maintenance by eliminating the joints themselves.

RAILS BY THE MILE—"Ribbonrail" is formed by welding the rails together under pressure in the controlled heat of oxy-acetylene flames. The welding is done on the job before the rails are laid . . . and they become continuous ribbons of steel up to a mile or more in length.

Mile-long lengths of rail in use may seem impossible because of expansion and contraction under extreme changes in weather and temperature. "Ribbonrail" engineering has solved this problem . . . reduced rail maintenance cost, and created the comfort of a smoother, quieter ride.

A UCC DEVELOPMENT—"Ribbonrail" is a development of the people of Union Carbide. It is another in the long list of achievements they have made during 40 years of service to the railroads of America.

STUDENTS and STUDENT ADVISERS

Learn more about the many fields in which Union Carbide offers career opportunities. Write for the free illustrated booklet "Products and Processes" which describes the various activities of UCC in the fields of ALLOYS, CARBONS, CHEMICALS, GASES, and PLASTICS. *Ask for booklet B-2.*

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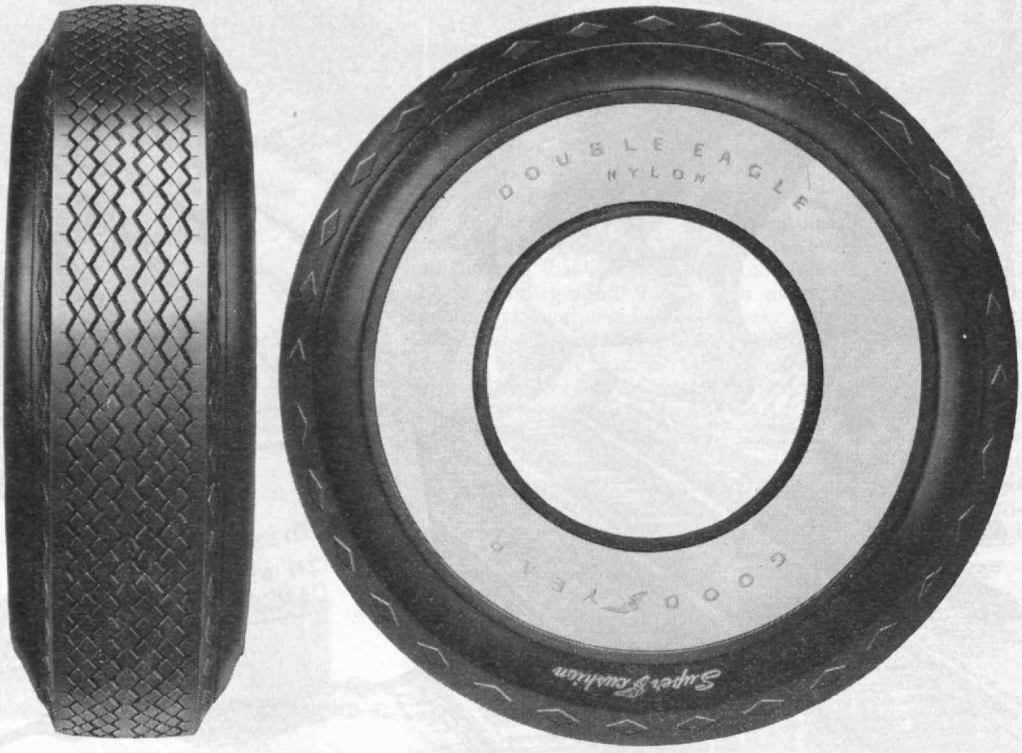
UCC's Trade-marked Products of Alloys, Carbons, Chemicals, Gases, and Plastics include

PREST-O-LITE Acetylene • LINDE Oxygen • PRESTONE and TREK Anti-Freezes • BAKELITE, KRENE, and VINYLITE Plastics • SYNTHETIC ORGANIC CHEMICALS
NATIONAL Carbons • ACHESON Electrodes • PYROFAX Gas • HAYNES STELLITE Alloys • ELECTROMET Alloys and Metals • EVEREADY Flashlights and Batteries

GOODYEAR ANNOUNCES THE NEW PLUS-10

PLUS



The only All-Nylon Cord passenger-car tire!

HERE, without question, is the world's finest passenger-car tire! It will outlast and outperform every other tire you can buy! It is so far ahead—in safety, in long mileage, in owner-satisfaction—that no other premium tire, no other passenger-car tire of any kind compares with it!

See this superlative new tire at your Goodyear dealer's now.

PLUS 1—The only passenger-car tire in the world with an all-nylon cord body.

PLUS 2—Goodyear Heat-Tempered Nylon Cords make the new Double Eagle one and one-half to two times as strong as standard tires.

PLUS 3—Safety! Over two million miles of gruelling road tests *prove* this is the safest tire ever designed for a passenger car.

PLUS 4—26% more nonskid tread thickness gives up to 42% more safe mileage than standard tires.

PLUS 5—Goodyear's exclusive new Resist-a-Skid Tread grips at all angles of skid! Gives safer, surer traction on wet roads, on snow—even on ice!

PLUS 6—Full, safe traction for life! Exclusive Resist-a-Skid tread design never needs re-cutting to restore traction.

PLUS 7—Welcome comfort! Low-pressure, Super-Cushion ride soaks up road shocks, saves wear and tear on the car and you!

PLUS 8—New Scuff Rib protects white sidewalls when you scrape the curb.

PLUS 9—Extra beauty! Gleaming whitewall contrasts with diamond-sculptured jet-black shoulders.

PLUS 10—Value! With all the advantages of the exclusive Resist-a-Skid Tread, the *nylon* cord body, this tire costs only about 5% more than ordinary premium tires made of *rayon!*

And . . . with the New LifeGuard Safety Tube this tire is *blowout-safe* and *puncture-safe!*

GOODYEAR

PLUS-10 DOUBLE EAGLE

Double Eagle, Super-Cushion and LifeGuard, T. M.'s—The Goodyear Tire & Rubber Company, Akron, Ohio

Angela Calomiris from Black Star

"– *and therefore* $m\frac{d^2s}{dt^2}+f\frac{ds}{dt}+ks=0$."

THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CONTENTS *for May, 1952*

Vol. 54, No. 7

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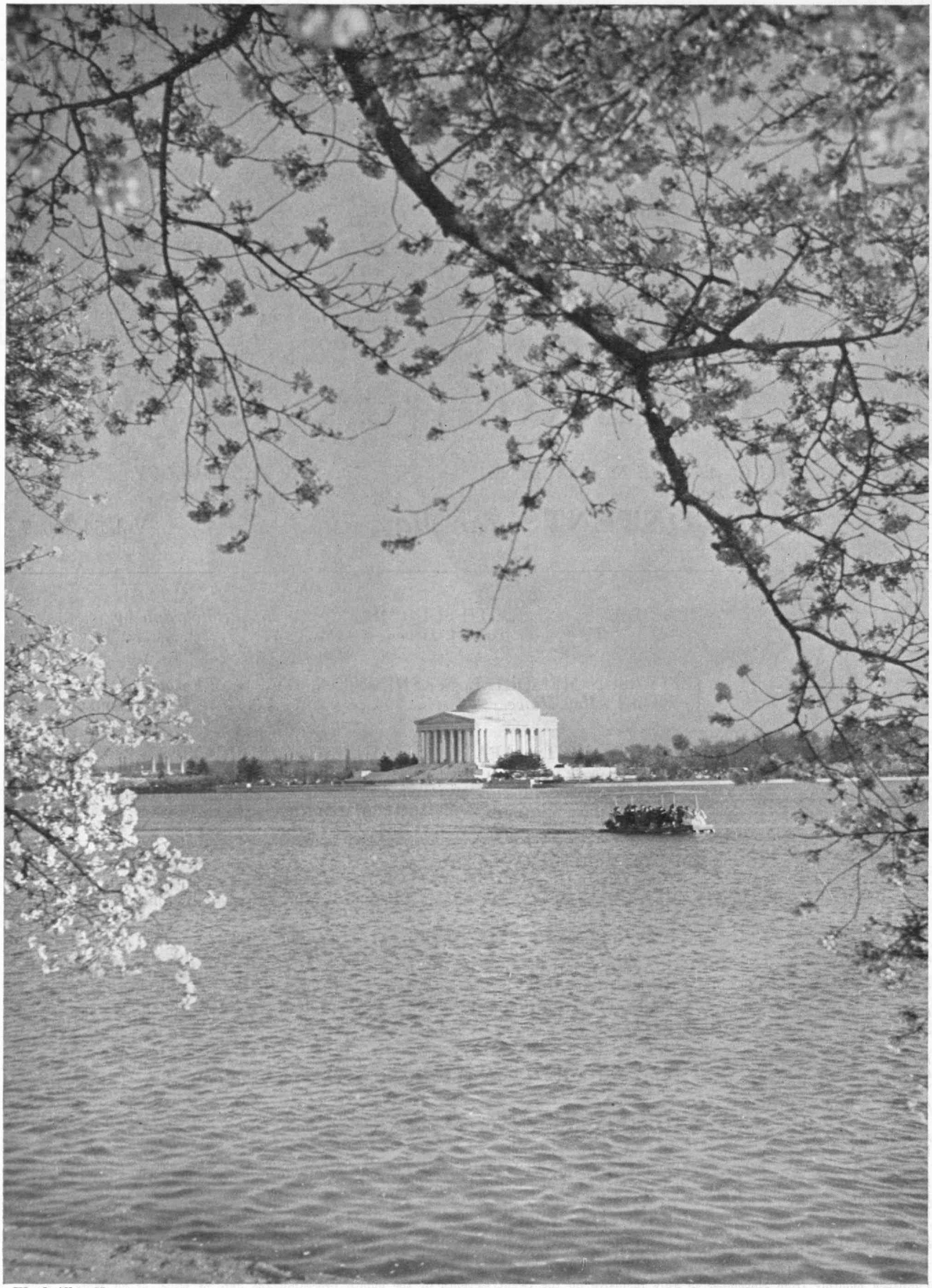


Ward Allan Howe

Jefferson Memorial and Japanese cherry blossoms at Washington, D.C.

THE
TECHNOLOGY
REVIEW

Vol. 54, No. 7 May, 1952

The Trend of Affairs

Managing Research Projects

LARGE research and development laboratories are relatively recent innovations in American industries, universities, military services, and government departments. Just as the growth of large-scale industry led to great changes in the internal organization of firms, the growth of large-scale research has brought with it new organizational and administrative problems. These problems are the focus of studies now being conducted by the Industrial Relations Section of the Department of Economics and Social Science, with the support of grants from the Social Science Research Council and M.I.T.

Preliminary studies by Herbert A. Shepard, '50, Assistant Professor of Sociology, have stressed the operating problems of small project groups within the large organization. Emphasis is placed on the problems of communication and co-ordination which must be solved if the potential values of bringing scientists together in joint research are to be realized. Effective use of the resources of a group, whose activities are interdependent but cannot be fully specified in advance, depends on the existence of an appropriate communication system within the group. The communication system used by a group of people, in turn, is intimately connected with their attitudes toward one another, toward the group goals, and with their ability to reward or discipline one another. If members are agreed on the research goals and possess means of rewarding contributions toward these goals, the essentials of a well-integrated research team are present.

These criteria were used in studying the operation of a university laboratory engaged in sponsored research. An especially productive project group was studied intensively to discover the relationship between its productivity and the attitudes of its members. It was found that most of the project members were personally interested in acquiring skill and knowledge of the project research area in order that they might later qualify for good positions in industry. Competent work in this area called for a combination of skills and knowledge from a number of science and engineering fields. Thus, the solution of project problems provided an opportunity for the research workers to learn from one another. The goal of a future position in industry, for which the laboratory work was regarded as a preparation, reduced competition for higher positions in the laboratory hierarchy so that there was no temptation to withhold help from colleagues, or to use individual ideas for personal advancement in the laboratory hierarchy. Instead, those members were regarded as leaders who contributed the most not only to the solution of project problems, but also to the education of their associates.

Such observations have helped to sharpen questions of appropriate administrative strategy in research organization. The tendency to model the research laboratory along the lines of an efficient manufacturing organization overlooks a number of crucial differences between them. The factory is designed for efficient repetition of operations rather than formulation of new operations. New operations and products are introduced into the factory by management rather than by workers. By advance classification, factory operations can be co-ordinated by specific sequences of activity for each employee, whereas research operations can be co-ordinated only in a series of short-term agreements and frequent communication among research personnel. For these reasons, it cannot be assumed that administrative systems appropriate for a factory are also appropriate for a laboratory. The crucial importance of communication and co-operation in the research team suggests that management's reward system would be better linked to the process of research work than to its product, whereas in fac-

tory management, the tendency is to reward results. The importance of interpersonal relationships and communications systems in research teams has led to the design of experiments at M.I.T. in group productivity and creativeness to discover the procedures most favorable to efficient group problem-solving.

The results of the study of a university laboratory made it abundantly clear that the institutional setting is a very important factor in determining the attitudes and behavior of research personnel. A need was recognized for studies in other settings to discover successful modes of research organization in non-academic environments. Such studies form part of a program being carried out in collaboration with Professor Shepard by David A. Eberly, '49, Westinghouse Fellow in Industrial Relations, Lowell W. Steele, doctoral candidate in Industrial Relations, and Sanford M. Isaacs, Business Administration senior. The program is concerned with determining the applicability of various industrial management procedures to research organizations in the industrial firm, the role of research and development in industrial society, and the effect of the boom in research on the training and outlook of scientists and engineers.

Blue Jeans

As blue jeans – long the universal garb of workingmen – have now been adopted by the teenagers, one wonders at the ubiquity of this garment. Once the subject is considered, one also wonders at the various names applied to these trousers.

Often they are called dungarees. This word, originally meaning a coarse cotton cloth worn by East Indians, has been adopted by us to designate blue jeans which likewise are of coarse texture and made of cotton. Blue jeans are also sometimes identified as denims. Denim is, in fact, the correct name of the strong-twilled cloth of which they are made. Dictionaries state that denim is derived etymologically from the last two syllables of *serge de Nîmes*, meaning a serge or twilled fabric that originally was made in Europe, especially at Nîmes. A twilled cloth is one in which the weft thread passes over a single warp thread, then under two or more. The sequence is shifted progressively with each successive passage of the shuttle, so that a diagonal rib on the face of the cloth results. We use the word serge to mean a woolen twill; cotton twill we call jean. Hence the third name for the garment under discussion, "blue jeans."

Why blue? For utility, a dark color that does not show soil readily is required. The cheapest and most widely used dark color for cotton is the blue of the vat dye indigo. Cheapness is indeed the keynote of blue jeans. The denim of which they are made is the least expensive of the tough cotton fabrics. With seams designed to be made with a single passage of a multiple-needle sewing machine, and pockets mainly mere patches sewn on the outside, high speed and therefore low production cost are achieved. As a result, blue jeans are the cheapest durable trousers.

Perhaps it is a measure of the American character that the nearest approach to a national folk costume in this country is worn for reasons of utility, durability, and economy.

Rubber Rivets

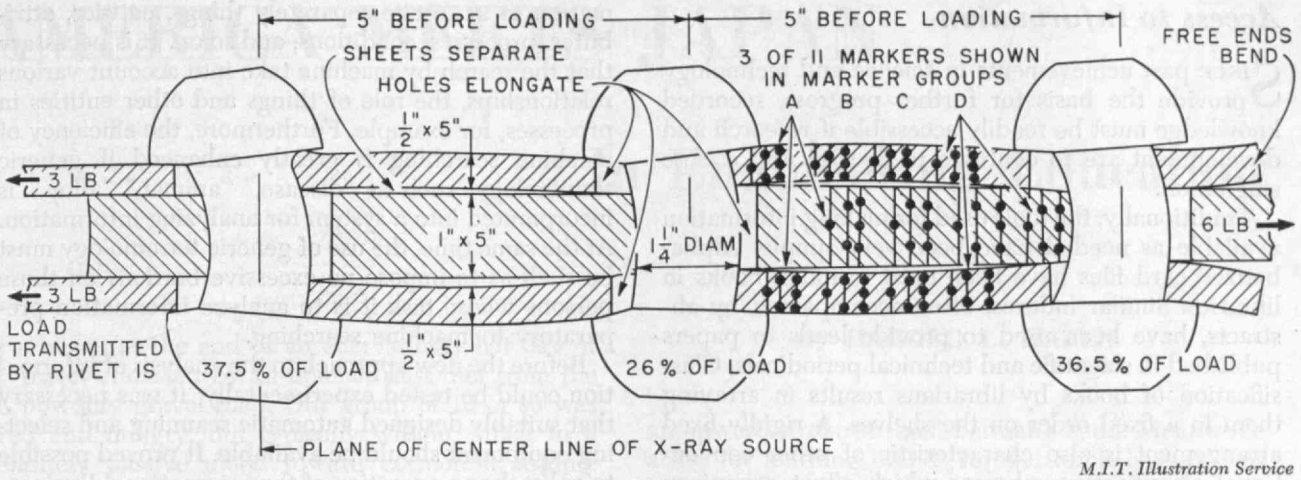
The relative movements of the various elements in a rigid metal structure are too small to be seen. They can be measured (in millionths of an inch) but important deformations may be overlooked and never determined because stress analysts have no procedure for indicating the locations of all significant strains. Certain behavior patterns may be assumed for each of the different elements, but these assumptions may not be in accord with the facts.

In the Department of Aeronautical Engineering, research, under the direction of Professor Joseph S. Newell, '19, and with the support of the National Advisory Committee for Aeronautics, has been directed toward the development of techniques for magnifying deformations and simplifying the analytical problem. Foam rubber analogues are employed to show, on a scale that can be simply observed and measured, the internal strain distribution in a structure, especially that near points of stress concentration.

When the metal elements are replaced by foam rubber, displacements are so exaggerated that unsuspected deformations become obvious to the naked eye. For simple units such as cemented, welded, or riveted joints, rubber specimens may be made and loaded to simulate conditions in comparable metal structures. A rubber having a modulus of elasticity of eight to 10 pounds per square inch in tension may carry a load producing a stress intensity of two to three pounds per square inch without exceeding the proportional limit of the material. The strain under such a load would be of the same order as that in an aluminum alloy specimen carrying a stress of 2,000,000 pounds per square inch, or about 600 times that at the proportional limit of the aluminum. Displacements measured in ten-thousandths of an inch in metal become hundredths of an inch in rubber. Deformations which are unsuspected in metal become obvious in rubber.

When a gridwork of lines is stenciled on a side or edge of a rubber specimen and photographed both before and after a load is applied, the distortions of the grid may be measured from enlarged prints and stress distributions computed from them. This was done on a simple lap joint composed of two rubber sheets cemented together, and it was found that the shear stresses at both ends of the cemented area greatly exceeded those near the middle of the joint. Since this nonuniform stress distribution occurred in the elastic stress regime, it was considered significant for repeated load or fatigue conditions because such loadings seldom produce high primary stresses. The fact that actual maximum stress intensities exceeded those obtained from conventional methods of analysis indicated that fatigue data could not be correlated if analyzed by such methods.

A similar nonuniform load distribution was found from studies on foam rubber models of riveted joints. When two rivets were used in line, each took about half of the load as would be expected. When three were used, the outer rivets each carried about three-eighths of the load; the center rivet about a quarter. These results were obtained from specimens having short lengths of thin steel drill rod and cotton threads



M.I.T. Illustration Service

Rubber rivets and foam rubber structural plates are used with radioactive marker threads in aircraft studies to amplify and detect unsuspected deformations in rigid structures.

soaked in a lead nitrate solution (then dried) inserted in the rubber to serve as markers when the specimens were x-rayed. Such markers were clearly visible on the negative when x-rayed through five inches of rubber, and their displacements under load could be measured to 0.01 inch. Better agreement between applied and measured load would have been obtained were displacements measured to 0.001 inch, but the errors were small as it was, and the behavior of the different parts of the joint was exaggerated sufficiently.

Foam rubber is not isotropic, so care must be exercised when it is used for models in bending. Even in cases in which nonisotropic properties of the rubber preclude quantitative measurement, however, useful qualitative observations are often possible.

The illustration shows a tracing from one of the x-ray negatives of the three-rivet joint. No effort has been made to show all of the markers used in the specimen. Those that are shown were separated by the strain in the sheets and by the parallax of the x-ray beam, an effect produced by centering the x-ray tube so that horizontal rays passed through the thicker marker near the bottom of the specimen. Note the way the "unloaded" ends of the outer plates bend, the way the rivet shanks bend, and the local clamping effect of the rivet heads.

Seaworthy Ship Shapes

BECAUSE men have been going to sea for a great many centuries, there is a substantial body of written matter on the effect of various sea conditions on seaworthiness of ships of different hull characteristics. Unfortunately, most of this information is in the nature of lore rather than the result of scientific studies. This situation is especially true regarding the effects of the various elements of hull form on the ease of driving ships in a seaway. The characteristics which effect the smooth-water performance of ships are very well known, however.

To determine those factors which contribute to the seaworthiness of ships, the Society of Naval Architects and Marine Engineers, the American Towing Tank Conference, and the Department of the Navy are jointly sponsoring an extensive research study in several towing tanks throughout the country, including the Institute's new Ship Model Towing Tank. The nature of the investigation, thus far planned, is to have all test models related to a parent set of lines to be developed by the David Taylor Model Basin in consultation with the Maritime Administration. A fine family of models is being run at the David Taylor Model Basin, and an intermediate family of models will be studied at M.I.T. On the basis of present information, the elements of form which appear to have an influence on the seaworthiness of ships are the freeboard, forward and aft, the shape of the profile at the ends, the shape of the transverse sections at the ends, the relation between the length of the ship and the length of the waves, and the relation between the length of the waves and the height of the waves.

The experiments require the design and construction of a wave maker capable of producing waves of a wide range of lengths and heights. The design of the wave maker at M.I.T. is essentially completed, and the driving mechanism has been delivered. The experiments will consist of running each model at two different drafts among waves of five different lengths and three different heights. The observations to be made for each model will include: (1) the speed of travel in waves compared to that in smooth water for the same force applied in the two cases; (2) the amplitude of vertical motion of the model as a whole; and (3) pitching motion and accelerations accompanying such motions.

This is the first time that an effort has been made to reduce the time required for such a research project by carrying out the work simultaneously in more than one towing tank. Elaborate precautions have been taken to give assurance that differences in the measured results will be due entirely to the differences in the models and the wave, rather than to differences in techniques at the model basins. This research is essentially but a beginning. Only after the results of the tests have been studied will it be possible to determine the most fruitful sources of further investigation, but these will unquestionably include the effect of complex seas which cannot be produced at this time in any of the existing towing tanks.

Access to Information

SINCE past achievements in science and technology provide the basis for further progress, recorded knowledge must be readily accessible if research and development are to continue to flourish and escape stagnation.

Traditionally, the tools used for making information available as needed have been very simple. Alphabetized card files have been used to index books in libraries. Similar indexes, often accompanied by abstracts, have been used to provide leads to papers published in scientific and technical periodicals. Classification of books by librarians results in arraying them in a fixed order on the shelves. A rigidly fixed arrangement is also characteristic of other conventional classification schemes which effect groupings into classes and subclasses by employing pigeon holes or similar compartments, literal or figurative.

During recent decades, the record of progress in science and technology has expanded at an accelerated rate as the pace of research and development has quickened. More and more effort is required to search out needed information and to correlate it once it has been found. Conventional indexes and classifications compel professionally trained specialists to devote many hours to operations that are reducible to routine. In 1946, realization of this fact led James W. Perry, '31, research associate on the Center for International Studies, to initiate a study of the possibilities of using automatic scanning and selecting equipment to perform routine searching and correlating operations. Originally, this work was supported by a fund provided by manufacturers in the chemical industry, but in 1949 the scope of the project was broadened and sponsorship was assumed by the Carnegie Corporation.

From the start it was obvious that machine-searching methods must be developed in such a way that the varying requirements of specialists concerned with widely different problems could be met. In general, these requirements are definable by combinations of concepts. Information may be required about alloys characterized, for example, by a certain set of physical properties or by specification of certain components or by combination of such factors, perhaps in conjunction with other properties such as resistance to corrosion, and so on.

For small files of information relating to narrow fields of specialization, hand-sorted punched cards have proven useful. What can be accomplished in that direction is described in a recently published book entitled, *Punched Cards, Their Application to Science and Industry,** of which Robert S. Casey and James W. Perry are coeditors.

To cope with the problem posed by the voluminous literature of broad fields of knowledge, however, new methods for analyzing information had to be developed so that high-speed searching by suitably designed automatic equipment would be feasible. First of all, such analysis must take into account the essentially multidimensional character of information. It is not enough, however, to set up the analysis of information so as to cite separately things, entities, attributes, processes, conditions, and so on. It is necessary that the search by machine take into account various relationships, the role of things and other entities in processes, for example. Furthermore, the efficiency of machine searching is greatly enhanced if generic terminology, such as "disease," "animal," "alloy," is incorporated into a system for analyzing information. At the same time, the use of generic terminology must be such as to impose no excessive burdens on those persons whose task it is to analyze information preparatory to machine searching.

Before the new approach to the analysis of information could be tested experimentally, it was necessary that suitably designed automatic scanning and selecting equipment should be available. It proved possible to enlist the co-operation of the International Business Machine Corporation in designing a new set of punched-card machines for rapidly searching and correlating information. With the aid of the new I.B.M. machines, the new approach to the analysis of information was demonstrated last summer in Washington, D. C., and New York. The interest aroused in governmental and scientific circles clearly demonstrated the value of the present program now being pursued at an accelerated rate. A broad range of scientific and technical terminology is being systematized in order to make machine-searching methods more generally applicable.

*New York: Reinhold Publishing Corporation, 1951. $10.00.

Uncertainty Analyzed

BUGABOO of design and production engineers are the erratic variations which occur during the manufacture of a product. Tolerance limits and all manner of quality control procedures are required in order that such variations may be kept to a tolerably low level. But even under the most rigid system of inspections and checks, some variations are bound to occur. Minimizing such variations, which are called "uncertainties" in instrument engineering, is thus an objective of very considerable practical – as well as theoretical – interest.

An important phase of the uncertainty problem, particularly in the design of complicated instrument systems, is determination of the effect which uncertainty in each component may have on the cumulative error, or uncertainty, in the final output of the system. This phase is the subject of a study, "The Effect of Component Uncertainties on System Output Uncertainty," by Henry B. Brainerd, '49, member of the staff of the Institute's Instrumentation Laboratory. The study has been sponsored by the United States Air Force, primarily for benefit of design engineers and specification writers. It is intended to overcome many of the difficulties that, in the past, have deterred engineers from making full practical use of theoretical possibilities in the study of uncertainties because of the complexities of the problem. Results of the study are presented in a usable form that eliminates guesswork, minimizes computation, and assists the engineer to focus his attention on the uncertainty of those sources and components that make their greatest contribution to the total inaccuracy of the output.

AMERICA MEETS JAPAN

In Engineering Education

By HAROLD L. HAZEN

It began at the end of an enervatingly hot day of travel climaxed by an hour of dust diet from the powdery gravel road. Our group of 10 or so was tired and hungry, but typically willing, albeit in a definitely passive mood toward cormorant fishing. The neat little pavilioned river boats, lined along the stone-paved quay, already raised spirits perceptibly. Soon our boat, with a score of other identical craft, was being poled upstream as the lowering sun lighted the steep wooded hills on our right. We might be able to take this after all. Then the ice was broken. At the foot of a small chute of rapid water, we were told that we could await the haul-up crew now far upstream or get out and push. At this, half a dozen staid professors rolled up trousers and jumped in. We sensed wonderings in our Japanese hosts as to what might happen next. Trousers got wet, but our boat got upstream with all pretensions of dignity irretrievably left behind in the swirling waters of the chute.

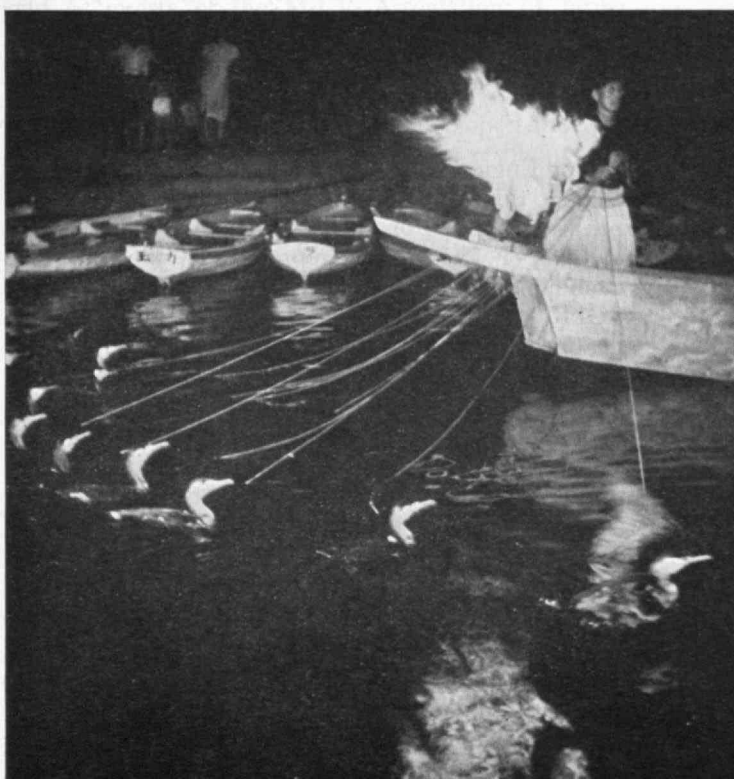
Presently, as we sat on our floor cushions in two rows facing each other at close quarters, there appeared the excellent Japanese beer, followed leisurely by an equally excellent sea-food picnic supper. Soon we elected to beach on the low gravelly left bank opposite the hills to watch the sun drop clear behind the distant mountain range, while giving the few remaining piles of cumulus a radiant glow of pink. Venus appeared over what could have been a faraway view of the Sandwich Range of New Hampshire. This evening was developing charm.

Other boats ranged nearby along the shore, with quiet Japanese family parties. One's glance lingered here and there on faces bespeaking life found good and serene. Soft singing was punctuated by the pop and swish of Roman candles purchased from the small peddler's boat. A plaintive Japanese flute and a pair of child musicians added to the gentle night sounds reaching us.

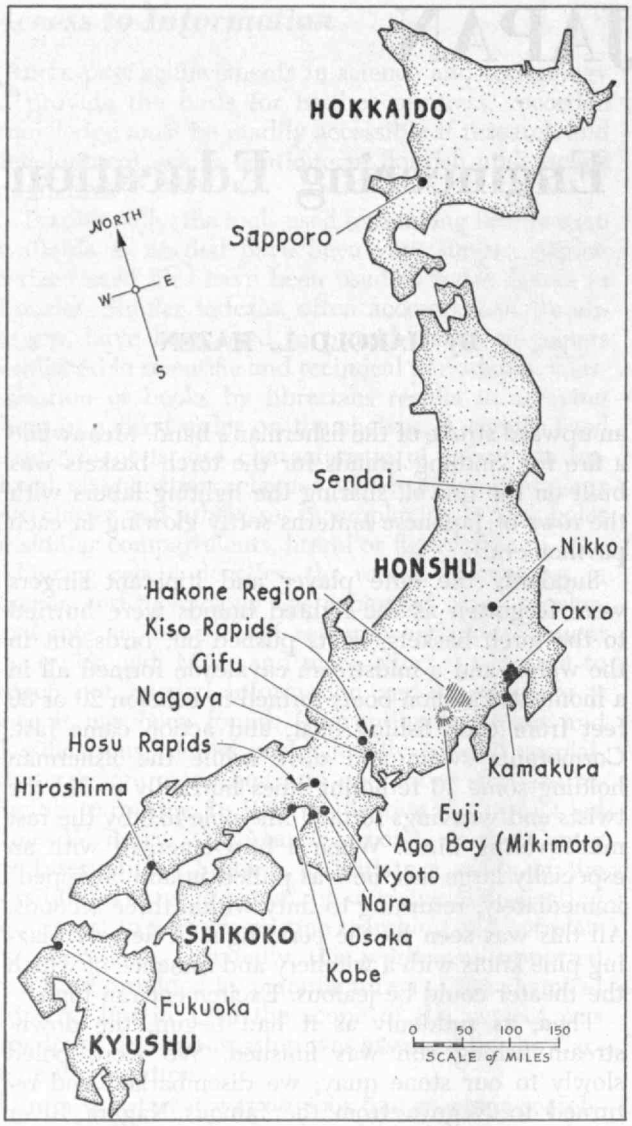
As darkness gathered and the Big Dipper emerged a rustle announced the approach of the fishing boats, each with its baskets of cormorants, its iron torch basket hanging from a bent pole in the bow, and its crew of three. On shore the birds were taken singly from their baskets, petted and fondled, then ringed and tethered on a heavy 15-foot cord. The ring on each cormorant's neck serves both as a sort of dual-purpose "go, no-go" fish gauge and as a halter collar. It permits small fish to be swallowed, but larger ones to be held in the gullet for subsequent disgorging by an upward stroke of the fisherman's hand. Meanwhile a fire for kindling brands for the torch baskets was built on the gravel, sharing the lighting labors with the rows of Japanese lanterns softly glowing in each pavilion craft.

Suddenly the flute player and itinerant singers were forgotten as the lighted brands were hurried to the torch baskets, boats pushed off, birds put in the water, and a midstream cavalcade formed all in a moment. Pavilion boats formed in echelon 20 or 30 feet from each fishing boat, and action came fast. Cormorants swam and dove while the fisherman holding some 10 tethering lines hurriedly undid the twists and weavings formed Maypole-like by the fast maneuvering birds. When a bird emerged with an especially large fish, he was pulled in and "stripped" immediately, returning to duty within three seconds. All this was seen by the eerie light of fiercely blazing pine knots with a witchery and romance of which the theater could be jealous. Excitement ran high.

Then, as suddenly as it had begun, the downstream fishing run was finished. We were poled slowly to our stone quay; we disembarked and returned to Nagoya from the famous Nagara River outside Gifu and its centuries-old tradition of cormorant fishing.



Practicing a privilege granted to his family many centuries ago, this cormorant fisherman placed each bird in the fishing team only after careful examination verified its fitness for the fishing run.



Starting its work at Tokyo, the Mission subsequently held working sessions at Kyoto, Nagoya, Fukuoka (on the southern island of Kyushu), Sendai (north of Tokyo), and Sapporo (on the northern island of Hokkaido) before the final session and report writing at Tokyo. Transport was mostly by air.

Mission to Japan

Our Engineering Education Mission to Japan had come to this land of natural beauty and gracious people as the result of an invitation of Major General William F. Marquat (representing the Supreme Commander Allied Powers generally referred to as SCAP) to the American Society for Engineering Education. Leading Japanese educators and members of the SCAP staff had agreed that a full and free exchange of ideas between Japanese and American engineering educators could produce valuable results; hence the invitation. The Mission included 15 professional engineering educators representing a cross section of American institutions, large and small, public and private, institutes of technology, and universities.* Its members came from east and west, from nearly every branch of engineering, and ranked from assistant professor to college president. The Unitarian Service Committee, a nonsectarian, nonpolitical, nonprofit corporation, long experienced in operating humanitarian foreign missions, provided administrative services under an Army contract. Perhaps most important, it provided our executive officer, Miss Dorothy E. Snavely, a veteran of two Japanese Medical Missions of the Unitarian Service Committee, and a treasure beyond price.

Army support was superb. Outside the continental United States we traveled on military orders with high priority. Special flights of a C54 transport airplane (military designation for a DC4) for the long hops between Japanese cities saved us precious days of working time. VIP (Very Important Person in occupationese) status, while suggesting a pretension not too congenial to professors, provided in practice invaluable facilities and freedom from red tape. Briefing and orientation to a foreign culture were excellent. Our basic and only professional instructions were to discuss engineering education broadly with our Japanese counterparts. Such freedom and support left us in the rather vulnerable position of having no alibi if we didn't produce results, but of course this is just the position that calls forth the best effort of responsible people. Our group has reason to hope that its efforts are not without useful results.

Our Mission activity centered about six principal university localities: the capital and university center, Tokyo; the ancient capital and great cultural city of Kyoto, with its industrial neighbors, Osaka and Kobe; Nagoya, with its vigorous Institute of Technology; Fukuoka on the southern island of Kyushu; Sendai, somewhat isolated well up on the main island of Honshu, but from which good men and work have come; and Sapporo, far away on the northern island of Hokkaido, where one almost senses a New England or Wisconsin landscape. Five and a half of our seven weeks in Japan during July and August, 1951, were spent in some 220 programmed panel and group discussion sessions in these six cities. Excellent briefing, planning sessions with our Japanese associates, and orientation aids filled the first week in Tokyo. In the last week, also at Tokyo, a 75-page report with a 130-page appendix was prepared, mimeographed, and submitted on the morning of our departure. In between, we saw many of the natural and cultural beauties, institutions, and folkways of the country. Strangely enough, ennui did not seem to be a serious problem!

Our work was given vital impetus by a strong and active Japanese Central Executive Committee of the Institute for Engineering Education, as the over-all program with the Mission was called. In fact, it seemed that our Japanese confreres worked harder than we, though perhaps one should take into account the fact that they had a fresh team awaiting us at each new location. Our initial concern about establishing rapport dissipated at the first planning session. Early agreement was obtained to use the panel- and group-discussion technique instead of lectures, even though our hosts were unfamiliar with this technique. Every session had Japanese and American cochairmen.

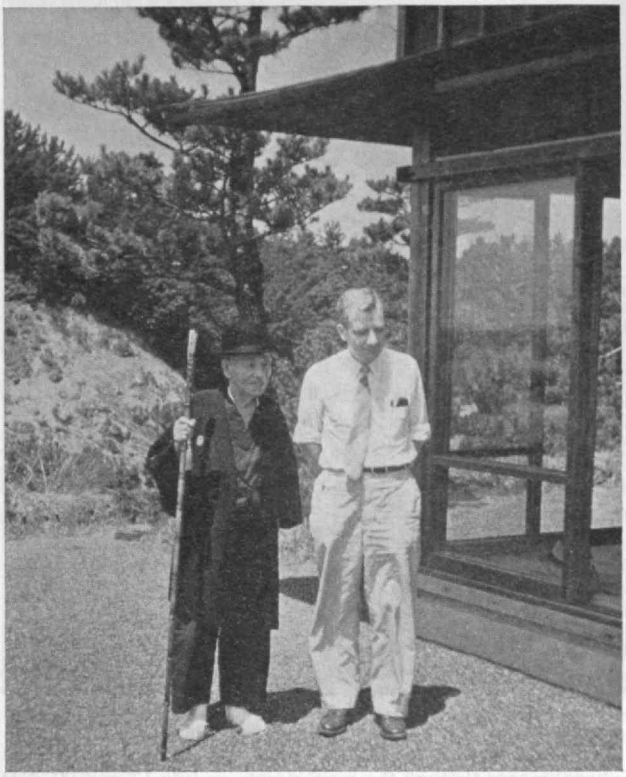
*Membership of the Mission is given at the end of this article, page 386.

Subject matter for programs, largely selected by Japanese preferences, ranged over the entire field of engineering education from administration and relations with industry to student counseling and classroom technique. We found ourselves faced with searching inquiries about their problems and ours in engineering education, which, despite many major environmental and cultural differences, are basically similar.

At most, language difference was an inconvenience, not a barrier. All programmed meetings were conducted with interpreters. For two-thirds or more of the Japanese professors, however, rather than being an absolute necessity, translation provided a check on, and practice in, their oral English plus the emphasis of repetition. Various indirect evidences showed not only literal understanding, but sensitive perception of the spirit of an idea as well. Of course we soon learned to speak slowly, to enunciate distinctly, and to use reasonably simple, direct, and easily parsable sentences stripped of nonessential ideas. Fairly sophisticated words caused little trouble if used as Webster and Fowler suggest. One way to improve one's English is to speak to Japanese!

Mission members have repeatedly been asked about the Japanese attitude toward Americans. Our reception on the country roads or small back-street shops was uniformly gracious and marked by a desire to please that could not be explained by formal politeness. Among our professional associates we were treated with a consideration and generosity far beyond the bounds of traditional Japanese courtesy.

Thus our terms of reference, the facilities placed at our disposal, the attitudes and efforts of both our officials and the Japanese, and all other aspects of our environment provided a setting notably free from annoying or frustrating circumstances. Our only irritant was heat. In midsummer Japan provides temperature and humidity somewhat more generously than Washington, D.C., but without its air conditioning.



Kokichi Mikimoto, originator of successful commercial pearl culture, and Professor Harold L. Hazen, '24, head of the Mission. A notable personality, Mr. Mikimoto, at the age of 93, is looking toward new and more scientific methods of advancing his industry.

The exceptional degree of congeniality that developed in our group was no less fortunate than fortuitous. Few of us knew each other prior to arrival in Tokyo. Then came the notable first week end as guests of the M.I.T. Association of Japan (as recounted in the November, 1951, issue of The Review). The return from the visit to the scenic Hakone region saw the team spirit already established. This spirit never lapsed. It soon developed the free give and take of a closely knit family, resolving differences without residual feeling, pulling solidly together without losing one whit of individualism – and who ever saw established professors without individuality? It was a team such as a chairman may dream about but rarely experiences.

An American, walking about the campus of Tokyo University without knowledge of his whereabouts, might spend some time discovering that he was outside the United States, except for the people he might meet.

Engineering Education in Japan

Before giving any impressions or observations about Japan, one should provide certain elementary facts. Japan's area, of which roughly a sixth is arable, approximates that of California. Her population of 83,000,000 is well over half that of the United States. With perhaps the most intensive hand cultivation known, Japan can grow only 80 per cent of her food. Her only important economic resources are fair coal, good hydroelectric power, and labor. To eat she must manufacture and trade; hence the importance of technology to her very existence. Everywhere one

The Hoko, as a part of the Gion Matsuri, or festival, in Kyoto, dates back to 876. A procession of floats, such as that shown above, moves through the main streets on July 17 and 20. Not shown here is a 30-foot pine tree rising above the roof of the float.

sees evidence of an economy of scarcity, aggravated now, of course, by the destruction of war, but clearly evident in long-established cultural and traditional patterns. Even in the highly developed art of flower arrangement these beauty-sensitive people economize, with an effect of notable beauty, by using only one or two simple elements with great skill where we use a lavish bouquet. The Japanese show much ingenuity in living inexpensively and simply.

This economy of scarcity, indeed austerity, is evident in the universities. Buildings, while adequate, are sparsely equipped. Central heating was a victim of war-scrap drives, although after removal the iron ironically was found too impure to be useful as scrap. Libraries are woefully inadequate in collections, and circulation is severely restricted. Professors' salaries are at the $40-per-month level, of which 70 per cent goes for family food. In general teaching laboratories are meagerly equipped, frequently with pre-World War I apparatus. Research laboratories fare much better, a fact symbolic of the heavy emphasis on research as the primary function of a university. Along with this emphasis on research are found the glorification of the professor and other expressions of the strong German influence that fit naturally into the Japanese love of hierarchy.

In all this, one finds that the student takes a rather secondary role. He attends lectures, does some laboratory work, takes an examination once or twice in his university career, and gets his degree. Textbooks are almost unknown, homework nonexistent, physical facilities for study at school or at home virtually absent, and most communication between professor and student is formal and one way. However, selectivity for entrance is extremely high, and good students survive. In general, graduates are characterized as too exclusively theoretical in interest and aptitude to be of greatest use to industry.

This system, in which only the superior person benefits academically, has produced some notable men, for example, Honda, Yagi, Okabe, and Yukawa, to mention a few. But it has been less successful in providing Japanese industry with the many well-trained engineers that our American industry finds essential to high-quality products and continuing new developments. Some Japanese technical products are excellent, but many are of indifferent quality, and too often distinguishable from Western prototypes only by the Japanese name plate. Quality control is largely unknown. The inspector who rejects a part is deemed to have thereby brought personal disgrace to the workman who made it, an extremely serious matter in Japan.

One sees that great potential benefits to Japanese industry would accrue from substantial numbers of young men who were trained to view practical technical problems objectively, to see the whole problem and to apply scientific principles with common sense to its solution. Many of Japan's leading engineering educators are fully aware of these facts and are courageously pushing against the traditions which have been upheld for years. They gave strong support to the work of our Mission.

From first to last we emphasized that any enduring change in Japan's engineering education can come only from the Japanese themselves. It must be responsive to Japanese needs, conditions, and sense of values. We told them, usually in response to inquiry, what we did in America and why. On occasion we told why we would find a Japanese usage unacceptable in America, but we had neither the authority nor inclination to tell them what to do. In the

Accomplished dancers, conversationalists, and players of the samisen, the geisha in Japan traditionally perform social functions of the household, leaving to Japanese wives the homemaking phase.

closing summary, the Japanese took particular note of this attitude and the stimulus that it had provided.

Perhaps the most useful immediate result of the Mission was the bringing together, for the first time, of large numbers of Japanese engineering educators and industry representatives for broad-based consideration of engineering education and its relation to industry. In such matters the natural Japanese pattern is individualism with very limited mutual exchange. Toward the end of our program, we were told that informal Japanese sessions were extending far into the night. This phenomenon, so familiar in our scene as the source of fruitful conceptions, was a novel break in Japanese tradition. We hope that this innovation may endure. Actually the initial steps in the formation of a Japanese counterpart to our American Society for Engineering Education had been taken before we left Japan. Such a society, including industry members as well as university people, would provide a forum that could make great contributions to Japanese engineering education.

The last and summary session with the Japanese during the final, report-writing week in Tokyo, was indeed heartening. While the little signs that one always watches as unstudied indicators of reactions had suggested reasonably good communications, we found not only excellent literal comprehension but a remarkably sensitive perception of the underlying spirit and implications as well. We left with a sense of having achieved more than a casual exchange of commonplaces, of having rather reached the heart of the subject with our Japanese fellow educators. We had worked hard toward such a goal.

American Professors Learn Too

Yet withal we somehow managed to see a bit of Japan. Paradoxically, a strenuous professional assignment seems to provide a superior access to the cultural and natural attractions. SCAP doctrine encourages close acquaintance with the country as a direct contributor to that understanding of a strange culture so necessary to effective work with its people. Encouragement took the tangible form of staff cars available on call, of numerous invitations by officers to show us interesting sights, of transportation arrangements to provide optimum use of our time, and of virtual thwarting of red-tape specialists.

For their part the Japanese could easily have kept us busy 24 hours per day without work sessions. For example, a hint of interest in white-water boating resulted in arrangements for running the famous Hozu River rapids amid spectacular mountain scenery near Kyoto.

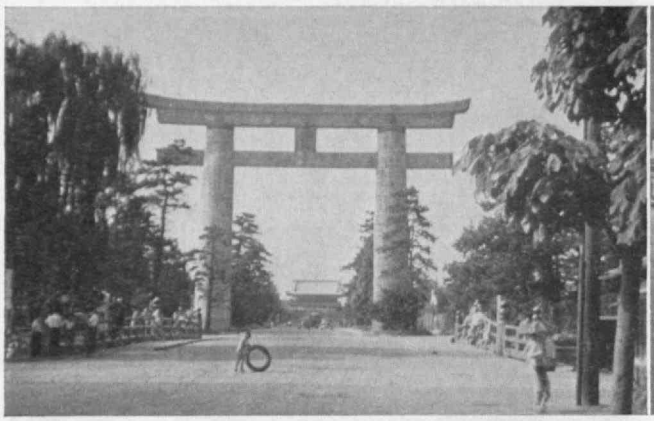
A high point was the visit with Kokichi Mikimoto, the originator of successful pearl culture. A motorboat ride takes one from the electric car station at Kasikojima through the islands of Ago Bay to his home pearl farm at Takoku, one of his 11 farms. One sees women diving for three-year old, naturally grown, pearl oysters in which spherical seeds, made of Mississippi River mussel shell, are surgically inserted with a bit of mantle tissue as cores for pearls. After the operation the seeded oysters are placed in wire mesh baskets and hung from rafts in the bay, where they feed on plankton brought in by the tidal currents. Up to four years later, when the oysters reach old age, the pearls are removed, sorted, drilled, and assembled in strings for world markets.

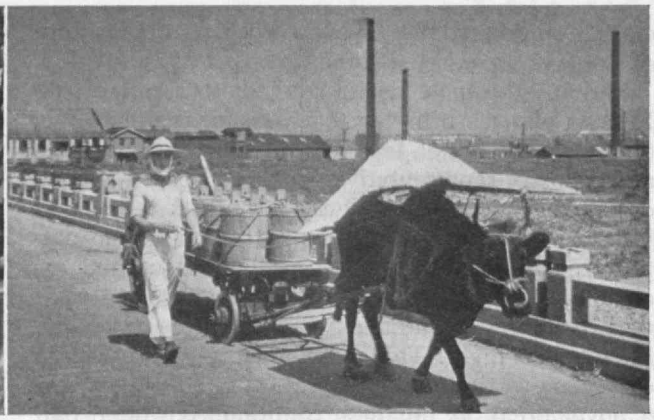
Filled with people, Japanese streets, lined with small shops and sometimes shaded with cloth or split-bamboo awnings, are a fascinating sight, day or night.

Mr. Mikimoto, 93 years young, looks ahead to at least eight more years of life to accomplish his "must" projects. At a luncheon on the porch of his guest house overlooking the bay from a height, he told us that his development of pearl culture had been largely empirical, but that he was confident that the application of biology, chemistry, and physics would produce great improvements in quality and yield. Though he apparently knew no English, his perception, clear mind, and enthusiasm made conversation with him an inspiring experience. Translation merely provided a certain leisureliness of pace and moments for reflection. His responses were crystal clear, even on subtle points. A gracious and kindly man, he has been host to many thousands, from the G.I. private to many a world figure.

Japan's ancient capital and cultural center, Kyoto, was purposely spared the American bombings that so thoroughly devastated practically all other important cities of Japan. Nestled among surrounding mountains, Kyoto's setting begets naturally the beauty wrought by her people. Founded in 746 A.D., it was capital from then until 1868, when Edo, renamed Tokyo (Kyoto with its syllables interchanged), became the capital city. Kyoto's vast wealth of tradition and beauty could barely be sampled during spare hours and a week end.

By one of our many strokes of good fortune, our visit coincided with the Gion Matsuri, Kyoto's festival of July 16 to 24, dating back to the Ninth Century. It originated in a mass supplication to the gods for delivery from a great pestilence. We saw the large Hoko or procession cars, towering 30 feet or more and capped by sizable pine trees, moved





Left: *At Kyoto this huge reinforced concrete torii, symbol of the Shinto religion, marks the entrance to a shrine area. Smaller wooden versions are to be found everywhere in Japan.* Right: *No waste is permitted if the nitrogen cycle in Japan is to be balanced. Hence, city wastes are transported to the fields in the ubiquitous covered wooden "honey-bucket" sewerage system. Considerate owners sometimes provide shade for their draft animals.*

through the streets on the last day of the festival back to their home shrines. The sides of these Hoko carry old Flemish tapestries, oriental rugs, and other hangings that one normally sees only in museums. In the larger Hoko an open room or balcony 15 feet above the street houses a score of musicians playing Japanese flutes. Two ceremonial coachers, on a timber over the front axle, perform a sort of formal dance with fans and chant encouragement to the many men hauling the car by two long ropes. Shinto monks in light blue kimonos accompany some cars. Though the cars are rich and elegant in decoration and constructional detail above, the design of the running gear may well date back to the time of Charlemagne. The front axle is fixed: hence, corners must be negotiated by prying the massive front wheels onto a green sapling corduroy pad over whose slippery bark the wheels can be inched around the turn to the accompaniment of many grunts and profuse sweating. We were told that trolley wires are removed each year to permit passing of this procession. Other smaller similar floats called Yama were carried a few paces at a time by means of timbers shouldered by many men. Then there are the elaborate gilded palanquins called Mikoshi in which the gods are carried from their normal shrines to the city for a few days to be near to the people. We were told that the former religous significance of this and other festivals has largely been replaced by a popular festival spirit. In this strange combination of spectacularly rich color, artistic detail, and treasure decorations on one hand, with the primitive mechanics on the other, one sees a symbolism of much in Japan's culture.

During the festival evenings while the Hoko and Yama are on exhibition in the city streets, they are hung front and back with a solid panel of paper lanterns whose soft glow fills the narrow streets. Japanese lanterns as used by the Japanese, sometimes massed, sometimes in dense or multiple lines, sometimes singly or in small groups in the intimate streets, are an artistic success far beyond that of our evening garden party use of them. An evening spent wandering from Hoko to Hoko among thousands of Japanese, also quietly drinking in the eerie beauty, invites a quick return to this fairyland come true.

At Kyoto one can see Japan's small hand industries in operation, even on a Sunday morning. On cloisonné, damascene, lacquer, wood-block printing, and silk weaving still is lavished the personal skill of the individual worker in handicrafts that the Western wages have virtually eliminated from our economy. Wood-block prints are hand printed without a press from hand-carved, flat-grain cherry blocks. As an example at random, an 11- by 18-inch print of a mallard duck in flight, exquisitely shaded, uses over 40 separate blocks and printings. Perfect registration comes from one corner and one lateral stop carved into the block. One set of blocks gives about 300 prints before the sharp corners wear too much. Such a print sells for 300 yen, which, at the official rate of 360 yen per dollar, amounts to some $0.85.

The damascene process is more involved. It produces flat plaques that are assembled for bracelets, necklaces, miniature screens, and cuff links. Steel sheet cut to appropriate outlines is sharply grooved by light hammering of a sharp, hand-held chisel. Some 200 grooves per inch are cut in each of three directions. Designs are formed by hammering fine gold and silver strip against this furrowed steel surface, thus locking the two surfaces of steel and design metal together. The gold and silver front surfaces are figured to enrich the design. The steel is then given a hard permanent black oxide finish by 24 two-hour cycles of nitric acid dip, ammonia dip, and baking. Next this steel disc is set into a flat silver (sometimes brass) saucer whose edges are shaped up around the steel to hold it. Finally the discs of appropriate size and shape are assembled with links or hinges to make the completed object, not forgetting the Japanese "inner beauty" in the form of engraved designs on the back side of the silver discs.

A couple of workmen were making cuff links with the seal of the U.S. Marines. The *semper fidelis* on the scroll at the top was letterpress perfect when examined with a hand lens, yet most of the workmen neither wore glasses nor used a loupe. A 15-segment bracelet, each segment of which is a complete separate work of art in itself, exquisitely wrought, sells for 1,200 yen to 2,000 yen ($3.30 to $5.50 roughly), depending on width.

(*Continued on page 378*)

Having Writ, Moves on

Personal Writing Implements Benefit from Technology, but Time and Style Bring Inevitable Change

By FREDERIC W. NORDSIEK

THE ability to communicate by speaking and writing is considered a prime point of differentiation that sets mankind apart from other animals. But, except for the invention of printing, progress in methods of communication was exceedingly slow until about the time of the industrial revolution. Great strides have been made during the past century, however, and at the present time we seem to be standing on the brink of very many changes.

Already, highly important and exceedingly significant progress has been made during the past decade in developing information theory and in arriving at a fundamental idea of what really constitutes information after all. Stimulated, in part, by the need for promoting rapid and effective communication on an international basis, serious research is now going on in the study of languages in a truly basic, quantitative way. Such studies are not alone of academic interest to the linguist or psychologist: they have highly important, potential applications. One possible application of research now going on is aimed at devising a translating machine for converting concepts from one language to another; another seeks to find techniques for converting the spoken word directly into print without intermediary human aid. Many advances have already been made, for example, in classifying data, in devising and using computing machines, in printing by a variety of photographic techniques, in developing methods for making four-color process halftones by electronic procedures. The commercial applications of these developments are probably not very far in the future.

Current progress, such as that mentioned above, appears to be aimed primarily at improving those instrumentalities which are beyond the financial reach of the solitary individual. But progress has also been made in other fields, and it is interesting to examine the mild revolution in personal writing implements that has come about in recent times.

Perhaps the goose quill, sharpened to a suitable point, has made as great a contribution to our present way of living as any instrument of writing. It was with such naturally grown implements that medieval manuscripts were copied by learned monks, and such famous documents as the Declaration of Independence, and our own Constitution and Bill of Rights, came into being. But, for all its good service, the goose quill pen can now be found only in historical museums or antique shops.

The old-time, steel pen point, set in a wooden holder and dipped into an inkwell, was little used until the Nineteenth Century and did not come into widespread use until the middle of that century. Today, after roughly a century of use, such pens have virtually disappeared from the contemporary scene. Exceptions to this general statement must be made for the notorious post-office and hotel-room pens and those on the depositors' desks of a few banks. But even in banks, the old-fashioned pen has been largely

One of artist Edward Laning's murals (depicting the "Story of the Recorded Word" in the New York Public Library) portrays a monk of the Middle Ages seated in a monastery patiently copying a manuscript with a reed pen.

replaced either by fountain pens anchored with sturdy chains to prevent pilfering, or else by the "one dip" pen. The latter implement resembles a fountain pen except that it lacks the internal ink reservoir; it remains immersed in ink when not in use so that the channels and grooves behind the nib are kept filled with ink by capillary action.

Although fountain pens have been on the market since the 1880's,* they were for a long time held in limited use, both by high cost before they were brought into mass production, and by the method of penmanship taught for many years in American grade schools. This method required that the pen be held well back from the point. Since the fountain pens then available could be grasped comfortably only near the point, they were outlawed and severe penalties were imposed on students found in possession of one. But by now grade-school authorities, co-operating with the inevitable, have accepted fountain pens.

The original fountain pens were filled by unscrewing the nib and employing a medicine dropper to introduce the ink, but they gave way to more convenient designs. Today, fountain pens are much the same as they were when the first self-fillers were marketed. Changes since the first self-fillers have been mainly in style features. In spite of lifetime guarantees, new styles and designs have been introduced and "ballyhooed" for the purpose of promoting obsolescence, much as automobile manufacturers use styling for the same purpose. Perhaps the sole truly utilitarian change that has been made is the cap that slips on rather than having to be screwed on, thus saving the user a negligible (perhaps infinitesimal) amount of time.

It is not surprising that fountain-pen makers have to promote obsolescence, for a good fountain pen is virtually imperishable, except for the rubber sac which dries, stiffens, and cracks in time, but is easily replaced. But some modern pens no longer employ rubber sacs, and hence are even less subject to the usual deterioration. As fountain pen nibs are tipped with the hard element, iridium, they will withstand almost limitless friction against paper. Mechanical parts are few, and moving elements are used only when the pen is filled. Indeed one sometimes sees veteran fountain pens a quarter of a century old or more in daily use.

The ball point pen has altered the writing implement field much less than the fanfare accompanying its appearance led one to anticipate. (A good account of the genesis of the ball point pen, together with a personality sketch of the man who introduced it to America, may be found in the *New Yorker,* February 17, 1951, page 39, et seq.). Although the ball point pen has some spheres of special usefulness, it suffers certain inherent shortcomings that have prevented it from wholly displacing either the ink pen or the pencil. Perhaps the most extraordinary part of the entirely remarkable story of the ball point pen is the price change that has occurred during its relatively short life. The first ball pens cost $15 or $20. Today pens made by the same companies with identical working parts sell for about $1.00, and equally utilitarian ball pointers may be had for less than $0.25.

*L. E. Waterman, U. S. Patent, February 12, 1884.

From the simple instrument for writing, described in 1565 by Konrad Gesner of Zurich, pencils have also evolved into elaborate and decorative mechanical contrivances. But the prototype, a stick of graphite-clay mixture, imbedded in a wooden case, is still widely used and enjoys many stubborn adherents. Indeed one mechanical pencil maker advertises that his product "feels like a wooden pencil." Mechanical pencils first gained a foothold when someone thought of making a thin lead, 0.046 inch in diameter, to provide a fairly sharp point comparable to that acquired by the wooden pencil when it is ground in a pencil sharpener. Later this idea was further extended in the launching of an ultrathin lead, 0.035 inch in diameter. For several years these two sizes have been standard on the market.

The original mechanical pencil design, and the one that still predominates, uses a screw mechanism to feed the lead. More recently introduced, a different principle employs a clutch, actuated by depressing a button at the top of the pencil, to advance the lead. This arrangement permits leads to feed one after another from within the pencil so long as the supply lasts, so that the more frequent insertion of a fresh lead, as required in the screw feed type pencil, is thereby eliminated.

A substantial sociological aspect of writing implements is their significance as caste marks in the modern business office. Here the number and variety of writing tools an individual uses is often an inverse measure of his standing on the organizational ladder. Thus, the lowly clerk is apt to possess a wide assortment of pencils and pens, which he bears in grand array across the top pockets of his vest and uses steadily throughout the day. As men achieve better paying positions, they perform less and less calligraphy themselves. Their thoughts are transferred to paper via stenographers or dictating machines; the signing of time sheets, requisitions, and so forth is delegated more and more to subordinates. Even checks are frequently signed with signature plates.

Acme of this trend is the "executive pencil," which may be seen in stationery stores in any urban office district. This gorgeous, golden mechanical pencil holds a soft crayon about a quarter of an inch in diameter. It becomes the top executive's sole writing implement. On rare occasions, when he has to initial a document, he employs it. Its main purposes, however, are ceremonial. For example, it is employed as a baton to emphasize points made during a conference. Emotions may be registered with it, as when it is tapped on the desk to show vexation. It is also useful to dismiss conferees, for which purpose it is returned to the pocket with a sweeping gesture, indicating unmistakably that the audience is at an end.

Young children, even before the blackboard stage, are often given crayons with which to scrawl on paper. Thus, those persons who climb the ladder of success high enough to become users of executive pencils complete a full cycle, and find themselves once again using a blunt crayon as their sole writing implement.

As befits an era of mechanization, the typewriter has provided still another means of personal writing.

(Concluded on page 390)

Of Yankee Granite—I

For 110 years, Bunker Hill's Rugged Obelisk Has Commemorated the Spirit of Independence

By E. H. CAMERON

PROLOGUE

On Saturday, June 17, 1775, on a fortified hilltop farm near Bunker's Hill, Charlestown, Mass., a volunteer force of American citizens faced the professional soldiery of the world's strongest nation. When their scant supply of ammunition gave out, the survivors retired in good order, to learn later that 140 of their neighbors and other companions had been killed in the fight. Their battle is therefore registered as an American defeat. It proved to be a striking victory, however, for historians agree that the Battle of Bunker Hill set the pace that led to ultimate victory in the American War of Independence. This little force of farmers, mechanics, tradesmen, and professional men had demonstrated how Americans should fight, when their independence is threatened.

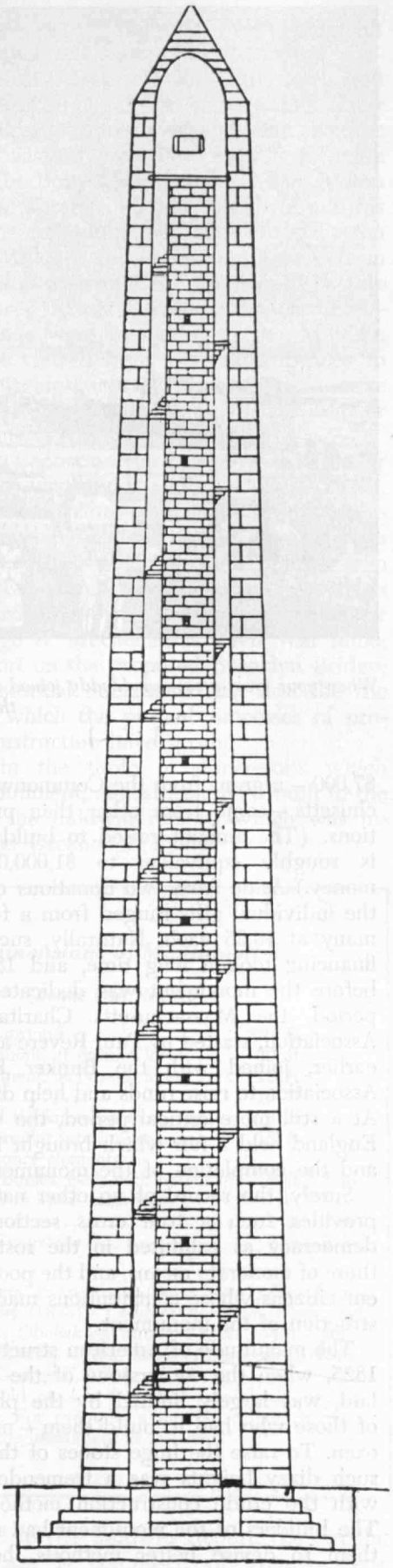
On the field where the battle was fought, the Bunker Hill Monument has now stood for over a century, the rugged lines of its granite masonry symbolizing the enduring strength of the stern spirit of American independence that it commemorates.

ABOUT 40 years after the Battle of Bunker Hill, all New England was deeply stirred by a pamphlet published by Major General Henry Dearborn who had taken part in the engagement. The pamphlet accused General Israel Putnam, one of the most revered of the Revolutionary heroes, of incapacity and cowardice in the battle. Thereupon, the Battle of Bunker Hill was fought over and over again, at the wharves, sail lofts and ropewalks of Boston, and in all places where men gathered to work and to talk about the events of the day. Crowded nine inside and five on top of the jolting four-in-hand stagecoaches from Boston, friends and foes of the popular Revolutionary hero would wrangle over his conduct at the battle. It would be a long argument, at five miles per hour, with little room for gestures. With tankards in hand, by the warm fireplace in the low-ceilinged tavern of the village where the coach would stop for the night, the passengers could express their convictions more forcefully, and the Battle of Bunker Hill would become a very live topic indeed. The furor over the Putnam-Dearborn controversy became secondary, however, as the bald fact was realized that, aside from a small wooden column, no memorial existed on the site of one of the most famous military engagements of American history.

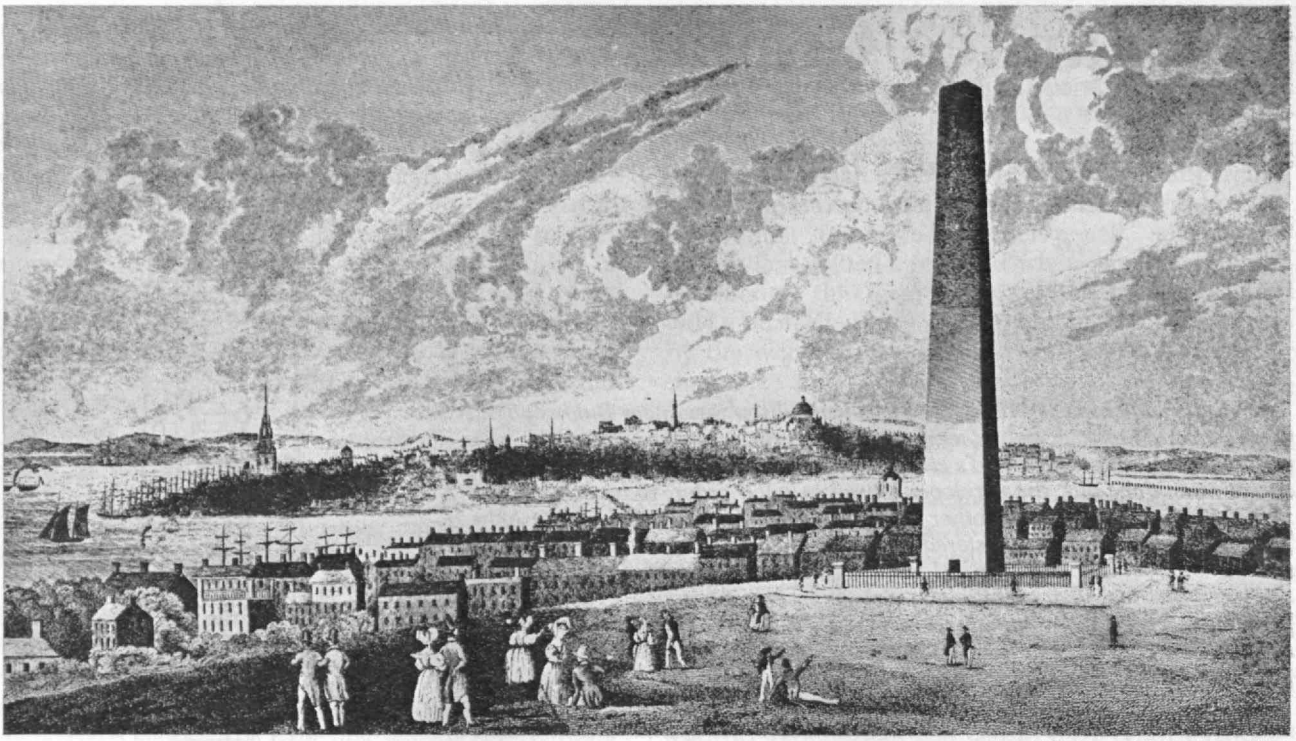
In the good Yankee fashion a group of prominent citizens conferred over their Madeira wine and coffee on ways to correct this humiliating situation, and in the year 1823, these men formed the Bunker Hill Monument Association, to solicit private contributions sufficient to build a monument on Breed's Hill, where the battle had been fought, in the town of Charlestown, now a part of the city of Boston, Mass.[1]

Unlike the Washington Monument, which had to be completed by government funds, the Bunker Hill Monument was financed practically wholly by private means. Our independent ancestors did not count much on government aid in the building of a memorial to relatives or neighbors who had died in the battle; such monuments were personal matters. Of the total collected amount of about $134,000, only

[1]From the start, the site of the battle seems to have been called Bunker Hill, although it was actually fought on Breed's Hill. The probable reason for this inaccuracy is that Bunker's Hill was then 110 feet high, and the adjacent 62-foot-high Breed's Hill was considered only a spur of the higher summit. Certainly, a contemporary British military map is entitled, "A Plan of the Action at Bunker's Hill."



Sectional view of the monument as depicted in Solomon Willard's Plans and Sections of the Obelisk on Bunker's Hill.



From Bunker Hill Memorial Tablets — 1889

When your great-great-granddaddy joined the Bunker Hill Monument Association, he received a certificate of membership with this fine view of old Boston of the year 1834.

$7,000 — a grant from the Commonwealth of Massachusetts — came from other than private contributions. (The amount raised to build the monument is roughly equivalent to $1,000,000 in modern money.) Aside from two donations of $10,000 each, the individual gifts ranged from a few at $1,000 to many at $0.25 each. Naturally, such a scheme of financing took a long time, and 18 years elapsed before the monument was dedicated. At a critical period, the Massachusetts Charitable Mechanics Association, started by Paul Revere and others, years earlier, joined with the Bunker Hill Monument Association to raise funds and help direct operations. At a still more critical period, the women of New England held a fair which brought in over $30,000. and the completion of the monument was assured.

Surely, the record of no other national memorial provides such a true cross section of American democracy as exhibited in the roster of the rich, those of moderate means, and the poor but independent citizens whose contributions made possible construction of the monument.

The magnitude of American structures of the year 1825, when the cornerstone of the monument was laid, was largely limited by the physical strength of those who had to build them — men, horses, and oxen. To raise the huge stones of the monument to such dizzy heights was a tremendous undertaking with the crude construction methods of the day. The builders of the monument had much to inspire them to devise better methods, however, in the examples of other enterprises in this virile period of American development. Steam navigation had already made notable progress in America, and while the lower courses of the monument were being laid, the first steam locomotives began to appear on the young American railroads. Canals, waterpower developments, and many new industries were being started in the young democracy.

A great contribution of the builders of the monument to the record of achievements of this period was their demand for granite in huge quantities to build it. This demand inspired the construction of the Granite Railway at Quincy, Mass. — America's first railroad.

The story of the promotion, design, and construction of the monument is therefore doubly intriguing. It gives a vivid picture of the status of construction methods of the period, when America stood on the threshold of the age of machinery. It also reveals the spirit of audacious determination of our construction forebears as they developed their unprecedented processes from which our present marvelously efficient methods of construction have sprung. The spirit of the builders of the monument is worthy of that of the heroes of the battle, which their masterpiece has now commemorated for over a century.

The Obelisk

Few modern architects, engineers, or contractors are privileged to work in such distinguished company as did architect Solomon Willard, engineers Loammi Baldwin and Gridley Bryant, and contractor James Sullivan Savage, who designed and built the obelisk which is called the Bunker Hill Monument. They were associated with Daniel Webster and young Edward Everett, both of whom later became Secretary of State; with Thomas Handasyd Perkins

(still revered in Boston as the man who endowed the Perkins Institution for the Blind), merchant prince of Boston, who had declined appointment by President Washington as Secretary of the Navy, after counting his own fleet and finding that he owned more ships than were listed in the young American Navy; with the famous artists, Washington Allston and Gilbert Stuart; and their monument followed the classic lines of the model submitted by Horatio Greenough, a Harvard student, who later became a noted American sculptor.

To the amazingly talented architects and engineers of Egypt, 50 centuries ago, the Bunker Hill Monument would have been a simple structure to design and construct. To these ancient builders, it would have appeared to be merely a somewhat stubby shaft, devoid of the beautiful, deeply carved hieroglyphic record which ornamented their own obelisks from base to pyramidion (apex), and it would be a simple thing to erect. In fact, some would say that the monument is really not an obelisk, for it is built of many stones of a few tons weight each, whereas a single stone composed a typical Egyptian obelisk. Such stones sometimes weighed as much as 500 tons. They were transported hundreds of miles and by some now unknown method were erected to the vertical position by manual labor.

Like the Egyptians, the modern engineer would also call the monument easy to design and build. Today's light, thin-walled chimneys of comparable height, pose much harder problems of stability against wind, and their designers feel fortunate when a chimney can rest on as firm a foundation as the glacial drumlin soil of Breed's Hill. Why, then, was the erection of the monument considered such an unusual feat at the time?

The answer is obvious: the monument was built in the days of hand labor supplemented by animal power, and hand labor to the independent Boston mechanic of over a century ago did not mean hundreds of slaves tugging in unison to the drumbeat of an Egyptian timer, while an overseer cracked his whip. And the builders had determined to construct their monument of one of the hardest of building stones -- New England granite – in the use of which there was then little precedent.

When the Bunker Hill Monument Association offered a prize of $100 for the best design of a monument, many plans, mostly of columns, were submitted. The Board of Artists of the Association (Daniel Webster, Gilbert Stuart, Washington Allston, Loammi Baldwin, and George Ticknor), who had to pass upon the submitted designs favored the Greenough model, based on an Egyptian obelisk of ancient Thebes. Although the directors had strongly favored a column, they yielded to the judgment of the Board of Artists and adopted the obelisk design instead.

Upon the adoption of the successful design, a committee, of which Loammi Baldwin was chairman, was appointed to "report a design of an obelisk." Baldwin was a Harvard graduate, who had studied abroad under the patronage of Count Rumford.[2] He had become one of America's most prominent engineers. Baldwin was responsible for the construction of the dry docks at the Charlestown and Norfolk Navy Yards; planned a canal tunnel (later built as a railroad tunnel) through the Hoosac Mountain; and was active in surveys for an adequate water supply for Boston, in the day when Boston people got their water from wells. Baldwin and his associates on the committee first went to the Boston and Roxbury Milldam (now Beacon Street), from which the monument would be prominently visible across the Charles River. Miniature models of different dimensions were mounted on the Milldam fence and were viewed from a definite distance to the rear. In this highly practical manner, the size of the most striking monument on distant Bunker Hill was determined.

The Baldwin Report on the design of the Bunker Hill Monument, described as neatly handwritten, was one of the valuable documents in the literature of early American engineering history. It ranks with the "Private Canal Journal" of DeWitt Clinton,[3] who promoted the Erie Canal; the report on American railroad standards of 100 years ago by Captain (later General) George B. McClellan of Civil War fame; Roebling's report on the proposed Brooklyn Bridge; and similar historical documents that describe the methods from which the present processes of promotion and construction have sprung.

As shown in the table of dimensions which follows, the monument, almost exactly, is built to the dimensions of the Baldwin Report, which was influenced by the Greenough model.

Dimensions of Monument

(From Old Records)

Height, above ground	220 ft.
Sides of monument, at ground level	30 ft.
Sides of monument, at base of apex	15 ft.
Height of apex	12 ft.
Minimum wall thickness, at base	6 ft.
Diameter of circular interior, at base	18 ft.
Height of masonry elements:	
78 main courses, each with height of	2 ft., 8 in.
5 courses in apex, each with height of	1 ft., 8 in.
Height of capstone	3 ft., 6 in.

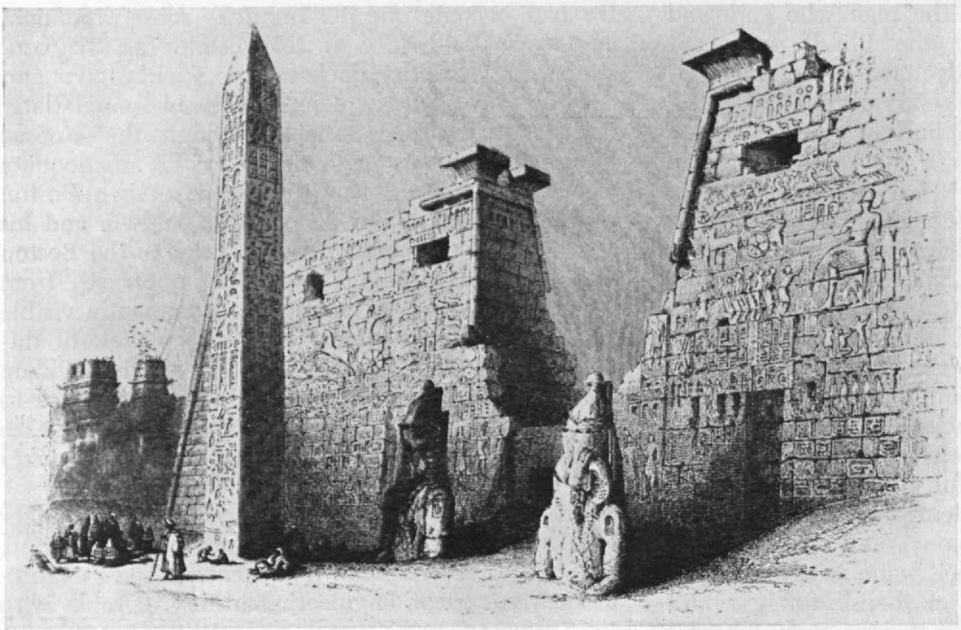
Measurements given above have been taken from: *Baldwin Report* (1825) – Loammi Baldwin; *Plans and Sections of the Obelisk on Bunker's Hill* (1843) – Solomon Willard; *History of the Battle of Bunker's (Breed's) Hill* (1875) – George E. Ellis.

Data from old records do not always check modern measurements. For example, a modern reference gives the height of the monument as 221 feet.

As described in the Baldwin Report, the circular winding staircase is composed of granite steps, starting with a width of about four feet and narrowing as the ascent is made. Baldwin called for "places

[2] The famous scientist, Benjamin Thompson, of Woburn, Mass., who later became an English citizen, and who established the fact that heat is a form of motion.

[3] William W. Campbell, *Life and Writings of DeWitt Clinton* (New York: Baker and Scribner, 1849).



This appears to be the Egyptian obelisk which inspired the design of the Bunker Hill Monument. Located at the temple of Luxor, it has been described as one of the finest monuments of Thebes. Its two-inch-deep hieroglyphics describe the record of an autocratic dynasty, and the promoters of the Bunker Hill Monument emphasized the contrasting fact that their monument was to celebrate an outstanding event in the annals of democracy.

From The Nile Boat — *1850*

of repose" (landings) at intervals. Modern architects call the part around which a circular staircase winds, the "newel." Baldwin's newel is a hollow wall, 10 feet in diameter at the base, about two feet thick.

Thus, the monument was designed by an engineer, not an architect. Baldwin violated a common rule for the proportions of ancient Egyptian obelisks, that the pyramidion should be as high as the base is wide, which is one reason why the Washington Monument is so beautiful. One regrets that architect Willard, who picked up where Baldwin left off, did not see fit to modify the Baldwin lines. There seems never to have been any question as to the monument's material: granite, the native New England stone. Although we admire the Bunker Hill Monument for its somber strength, it cannot be called a structure of beauty, as is the lighter-tinted and finer-textured marble Washington Monument, with its sharper apex.

We can also speculate on why Baldwin made the monument wholly of granite. At today's prices, the circular inner surface of the shaft and the circular chimney, or newel, around which the stone staircase winds, would be of tremendous cost. The dressing of the stone for a square inner area would be much cheaper.

Before criticizing Baldwin on his ponderous stair design, which could be replaced by a light, modern fire escape, we should look at the status of the tiny American iron industry of his day. The ironmasters were recovering from the decline of activity in the War of 1812, during which they had lost their British market. Baldwin would know that certain early railroad promoters estimated that granite tracks mounted with iron plates would be less expensive than the English-rolled rails, which the Americans could not produce. With masons in Massachusetts receiving about $0.18 an hour, granite was considered cheaper than iron. Baldwin therefore designed his stairway of granite, with a massive granite chimney "newel" to support the inner ends of the treads. Long before the monument was completed, however, a square staircase of either cast iron or wrought iron could have been produced, economically, by American ironmasters. It was then too late to make the change, however.

At about the time of the completion of the monument the first mechanical elevator was exhibited, but there was no room for an elevator at Bunker Hill — the newel was in the way. To climb a few score steps would be an easy task to our sturdy forebears, and to say that one has "climbed the Bunker Hill Monument" is a boast that hundreds of thousands of tourists to Boston have been proud to make for over 100 years. Baldwin may have been right again, as he usually was.

Baldwin specified that the monument should be square with the compass, a common Egyptian practice. As built, however, it is oriented to fit the redoubt (southeast corner) of the battle fortification. Structurally, Baldwin designed a sound foundation, 12 feet deep, built of six courses of stone with no small rubble that might deteriorate through the years. He specified that the starting level of the base of the monument should be established at the best elevation to avoid an uneconomical distribution of the excavated earth; today we would say that he balanced cut and fill.

The modern building contractor finds the estimate that went with the report, both practical and quaint. He will find that the digging of the pit for the foundation of the monument was figured in "squares," at $2.00 each; and since a square meant eight cubic yards, hand excavation was therefore priced at $0.25 per cubic yard. This price must have included the expense of shoring; also the pumping that such a deep pit would require. Baldwin proposed to dig a deep well on the site (today called a test pit), which would not only indicate the adequacy of the soil, but would also furnish water for construction purposes. Much water would be needed to mix the lime and sand mortar for the

monument as well as for the Roman cement, for which the estimated 100 casks were figured at $7.00 each.[4]

Masonry was then estimated in "perches," and by a little arithmetic, the modern contractor will learn that a perch was then equal to 25 cubic feet, or nearly a cubic yard. The 784 perches of masonry for the foundation were priced at $10 per perch, including "stones, hammering, mortar, laying, etc."

The report of Baldwin contains no computations on the structural stability of the monument. If the modern structural designer wishes to investigate how near the safe limit the monument has been tested by Boston's occasional hurricane winds, he has available the major dimensions given in the Baldwin Report, and the drawings of Willard's classic "Plans and Sections of the Obelisk" from which to make this simple computation.

Such computation shows that the monument is so heavy that a hurricane wind has an almost imperceptible effect on its stability. When it is subjected to a 100-mile-per-hour wind, the resultant force is displaced only a fraction of a foot from the center of the 50-foot-wide foundation. The maximum load on the soil is about five tons per square foot – a safe bearing load on "the bed of clay and gravel which composes the soil of the Hill" as described in an old account. The same account speaks of "great pains having been used in loosening the earth, and in puddling and ramming the stones." Surely, our construction ancestors would not have purposely disturbed the underlying soil, in an attempt to improve upon the natural bearing strength of one of the firmest of foundations: glacial hardpan. Like any good builder, they were undoubtedly merely puddling with water the earth backfill around the completed foundation.

Baldwin knew that granite would not deteriorate when exposed to the alternately hot and cold temperatures of Boston. Half a century later, the engineers who transported an Egyptian obelisk (one of the Cleopatra's Needles) to Central Park, New York, learned that the lovely textured syenitic granite of the Nile Valley was markedly inferior to New England granite in weather resistance, although it had kept its surface intact for centuries in the mild climate of Egypt. To protect Cleopatra's Needle in New York, a paraffin coating was found necessary.

Baldwin soon resigned from the building committee, partly because of the press of other work, but largely in protest against a clause which made its members, all of whom freely donated their services, financially responsible for the estimate. Promptly after accepting his resignation, the directors revised this clause. In reviewing the quaint old methods, the question arises: Would modern estimates be more accurate if the consulting architects and engineers had to pay for overruns?

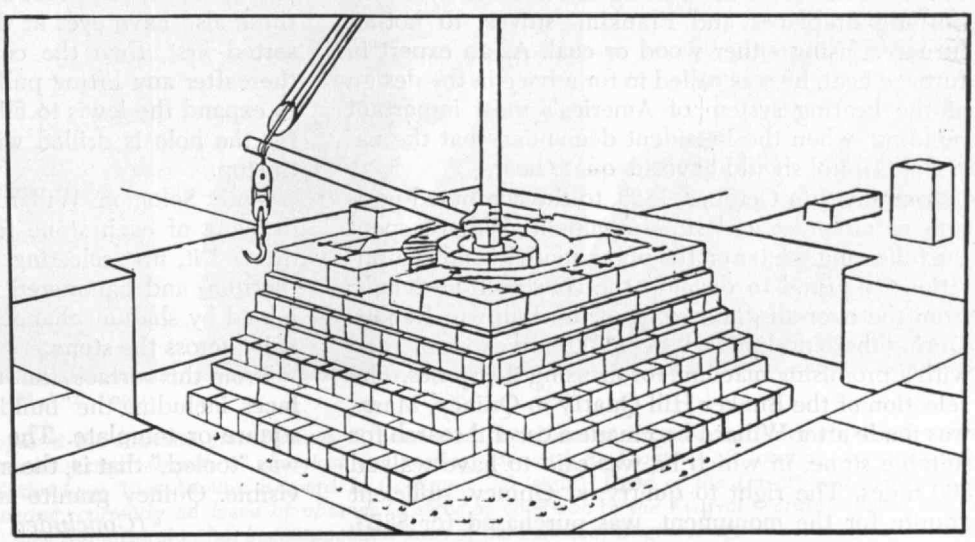
Transient Cornerstone

On June 17, 1825, the cornerstone of the monument was laid with impressive ceremonies. As the colorful procession marched up Bunker Hill to the stirring rendition of "Yankee Doodle" by the drummer of Colonel William Prescott's regiment, who, 50 years before, had been in the battle, the rear of the procession was just starting from distant Boston Common. The little Boston of over a century ago was crowded with visitors who had come from places as remote as South Carolina; by stagecoach, sailing vessel, or on foot, to hear the great speech of Daniel Webster, President of the Bunker Hill Monument Association, and America's first orator of the day. Years earlier, Chaplain Joseph Thaxter had paid the last offices to dying soldiers in the battle; now, he invoked God's blessing on the young American republic, as 40 veterans of the battle sat in a place of honor.

The most important visitor, of course, was General Lafayette, who, as a good Mason, spread the mortar on the stone when it was laid by Most Worshipful Grand Master of the Grand Lodge of Massachusetts, John Abbot. As the battle's only monument up to this date had been erected by the Masons, it was considered appropriate that the permanent monument should have its cornerstone laid with the Masonic ceremony. A little later, this procedure was sharply criticized during the Antimasonic period, which occurred before the monument was finished. [5]

[4] "The use of natural cement was introduced by Mr. Parker, who first discovered the properties of the cement-stone in the Isle of Sheppy, and took out a patent for the sale of it in 1796, under the name of 'Roman Cement.' " – Edward Dobson, *Rudiments of the Art of Building* (London: John Weale, 1854).

[5] Joseph Warren, the outstanding hero of the battle, was Grand Master of Freemasons for North America.



The monument's foundation is 12 feet deep. The bottom course of stone is in the form of a symmetrical cross, that is, it is a 50-foot square, with 10-foot by 10-foot areas at the corners cut away. The first course of the monument itself is also shown, revealing the circular inner surface of the wall and the hollow newel, or chimney which supports the inner ends of the steps of the winding staircase. The stones of the foundation are "fair-split," laid in lime mortar.

From Willard's Plans and Sections of the Obelisk on Bunker's Hill – *1843*

Many of the spectators knew that the cornerstone records would later have to be moved, for the plans of the monument were hardly started. Now, the box with its old newspapers, Continental currency, and other data is within a stone at the monument's northeast corner, and the original cornerstone stands in the center of the foundation.

With his usual generosity, Daniel Webster presented the copyright of his famous speech to the Bunker Hill Monument Association. The copyright was sold for $600, which was the second largest single contribution up to that date.

The Leading Character

Solomon Willard, architect and superintendent of the Bunker Hill Monument, developed the methods for the quarrying, dressing, transporting, and erecting the huge stones of the monument, that started granite on its way to becoming a principal material for massive structures in America for half a century, until reinforced concrete took over. (Today, granite is used extensively as a protective facing for concrete, for highway curbing, and for memorials.)

It is impressive to note the universal respect for the integrity and ability of this early American architect which all the records of the monument stress. In the drama of the building of the Bunker Hill Monument, he played the leading part, and his character resembled the sturdy structure which he designed in detail and erected. During his 18 years of service in the construction of his masterpiece, the Bunker Hill Monument, he would accept no recompense except for his expenses, deeming it his duty to work without pay on such a patriotic venture. He was also a substantial contributor to the building fund.

A self-educated man, who had learned architecture with sufficient thoroughness to become a teacher in the subject, he had also become proficient in the various sciences. Starting as a carpenter, Willard had proved both his craftsmanship and artistry by becoming an adept carver of ships' figureheads and models, including a model of the Capitol at Washington.

At the time the monument was begun, Willard was one of the leading architects of Boston. Typical of an architect's versatility, he had played an important part in the change from the heating of buildings by wood-burning fireplaces and Franklin stoves, to hot-air furnaces, using either wood or coal. As an expert in furnace heat, he was called in for advice in the design of the heating system of America's most important building, when the President demanded that the national Capitol should have adequate heat.

Appointed in October, 1825, to the combined position of architect and superintendent, Willard spent the following winter on the plans, models, and computations required to develop the construction details, from the over-all dimensions of the Baldwin Report. During these preliminary steps, Willard experimented with a promising machine for dressing the stones. The selection of the Bunker Hill Quarry in Quincy, Mass., was made after Willard had made a careful search for suitable stone, in which he was said to have walked 300 miles. The right to quarry, at Quincy, sufficient granite for the monument, was purchased for $325. Part of the amount to be provided by the Commonwealth of Massachusetts was to have been supplied by the cost of the dressing of the stone (then called "hammering") by the convicts of nearby Charlestown State Prison. The convicts, however, were obviously not sufficiently independent to work on this shrine of independence, so this procedure was not adopted.

Up-To-Date Quarry (Circa 1825–1843)

From various old American and English records of masonry construction, it is possible to construct an account of how the stones for the Bunker Hill Monument must have been quarried and dressed. The old names are used for the tools and methods, and the modern mason will find many of these old descriptions quite familiar.

The hornblende granite of the Quincy region was (and is) of very uniform texture and varies only in color, from gray to dark gray. In Quincy, Willard would find that both "sheet" and "boulder" quarry formations occurred: the joints in the ledge of the sheet areas making the granite appear as if stratified, and hence more easily removed; but the huge, rounded boulders in the other areas, measuring up to 40 feet across, had no joints. Rows of holes were drilled by hand (at least 25 years would elapse before practical power-rock drills became available) and large blocks loosened from the ledge or boulder, probably by wedges, possibly by light blasts of gunpowder. At this stage the quarried block was called "quarry-pitched." Stone of the smaller size for the monument was split from these blocks along lines of holes in which wedges were driven. These were probably of the plug-and-feather type, in which an iron wedge with an acute angle is fitted between two semicircular iron feathers, which taper in the opposite direction to that of the wedge, and thus fit the hole drilled in the stone, nicely. Granite has no cleavage planes, like slate; but a routine of smart taps on the plugs, back and forth along the line, soon splits the stone along a fairly smooth face. Two lewises (an ancient device), attached at about the quarter points of the top of the stone, were used to lift it. Three members make the lewis: a flat center bar with an eye at the top, the center bar being flanked by two wedge-shaped side pieces which are thicker at the bottom of the hole, and these also have eyes at the top. The wedges are inserted first, then the center bar slipped between; thereafter any lifting pull on the three bars is bound to expand the lewis to fill the hole and lift the stone, for the hole is drilled wider at the bottom than at the top.

With Solomon Willard's well-rendered isometric drawing of each stone for a guide, the stonecutter dressed it, first selecting the best face for the "bed" (bottom) and hammered it to a plane surface, determined by shallow channels (chisel drafts) cut diagonally across the stone.

From this surface, the stonecutter laid out the other faces, including the "build" (top), by his good mason's square or template. The texture of the visible face was "tooled," that is, the marks of the chisel remained visible. Quincy granite is a quality product, taking

(*Concluded on page 388*)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Cochrane Becomes Dean of School of Engineering

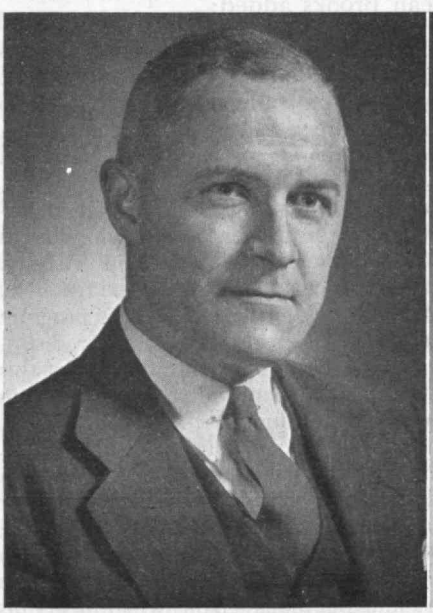
VICE-ADMIRAL EDWARD L. COCHRANE, '20, Head of the Department of Naval Architecture and Marine Engineering at the Institute, has been appointed dean of the School of Engineering. He succeeds Thomas K. Sherwood, '24, Dean of Engineering since 1946, who has asked to be relieved of the administrative duties of the Dean's Office to devote full time to teaching and research in Chemical Engineering, in which he has been a member of the Faculty since 1930. In making this announcement, James R. Killian, Jr., '26, President, said:

"With his distinguished background of experience in both engineering and administration, Admiral Cochrane is admirably qualified to fill this major administrative post at the Institute and to succeed Dean Sherwood, who has demonstrated superb qualities of leadership as dean."

Admiral Cochrane is at present on leave of absence to serve as head of the Federal Maritime Board in Washington. He is expected to take over the duties of Dean of Engineering during the coming summer. Admiral Cochrane, former chief of the material division of the United States Navy and of the Bureau of Ships, studied at the University of Pennsylvania from 1909 to 1910. He then entered the United States Naval Academy, was graduated with distinction in 1914 as an ensign, and advanced through the grades to his present rank of vice-admiral in 1945. He carried on postgraduate work at the United States Naval Academy until 1916, and was sent to M.I.T. for further advanced work in naval construction, for which he was awarded the degree of master of science in 1920. Admiral Cochrane attended the United States War College in 1939.

From 1917 to 1919 he was assigned to the Philadelphia Navy Yard, after which he came to M.I.T. for his graduate work and returned to Philadelphia, where he remained from 1920 to 1924, first in charge of construction of two battle cruisers, and later in charge of repairs. From 1924 to 1929 he was assigned to the Bureau of Construction and Repair of the Navy Department, specializing in submarine and general ship design.

In 1929 Admiral Cochrane was technical adviser to the United States Delegation of the International Conference on the Safety of Life at Sea, which was held in London. He was in charge of design and construction of submarines at the Navy Yard at Portsmouth, N.H., 1929 to 1933, when he was assigned as the force constructor on the staff of the Commander in the Scouting Force of the United States Fleet from 1933 to 1935. From that year until 1939 he was in charge of contract design, and from 1939 to 1940 he served as assistant to the head of the design division of the Bureau of Construction and Repair. It was in 1940 that Admiral Cochrane



M. I. T. Photo

M. I. T. Photo

Recent administrative changes at the Institute give Thomas K. Sherwood, '24, Dean of Engineering (left), *cherished opportunities to resume full-time teaching and research in chemical engineering. Bernard E. Proctor, '23* (center), *becomes head of the Department of Food Technology. Vice-Admiral Edward L. Cochrane, '20* (right), *Head of the Department of Naval Architecture and Marine Engineering, currently on leave of absence to serve as chairman of the Federal Maritime Board and Maritime Administrator, has been appointed dean of the School of Engineering.*

was appointed naval attaché at the American Embassy in London and a year later he was assigned to the post of hull assistant to the head of the design division of the Bureau of Ships, where he served until his appointment as chief of the Bureau of Ships in 1942.

Dr. Sherwood, widely known in educational and industrial circles as one of the country's leading chemical engineers, is a native of Columbus, Ohio, and was educated at McGill University, Montreal, where he received the degree of bachelor of science in 1923, and at M.I.T. where he took postgraduate work leading to the degrees of master of science in 1924, doctor of science in 1929, in the field of chemical engineering.

During World War II, Dr. Sherwood was, in turn, a technical aide, a section chief, and division member of the National Defense Research Committee with which he was associated from 1940 to 1945. In 1942 he was a consultant to the Baruch Committee which was concerned with the production of synthetic rubber from petroleum. In 1944 he was appointed expert consultant to the War Department with assignment to an Army mission on scientific intelligence which followed closely behind the retreating Germans in France and Belgium. Dr. Sherwood also directed several research projects at M.I.T.

Among the more important projects with which Dr. Sherwood was concerned during the five-year period of the war were: the development of a process for drying of penicillin; new processes for making certain explosives; fuels for rocket planes; an inert gas system for preventing explosions of aircraft fuel tanks; improved photoflash bombs; a simple chemical method of repressurizing portable flame throwers in the field; the development of large screening-smoke generators; the production of concentrated hydrogen peroxide, and many others.

Food Technology Head

ACTING Head since January, 1951, Bernard E. Proctor, '23, has been named head of the Department of Food Technology at the Institute by George R. Harrison, Dean of Science. Dr. Proctor is professor of food technology and director of the Samuel Cate Prescott Laboratories of Food Technology at M.I.T. He has done valuable research in food preservation, fermentation, microbiology, electronic sterilization, and sanitation. He is president-elect of the Institute of Food Technologists and special consultant to the U. S. Public Health Service.

Professor Proctor has a distinguished record of public and professional service. During World War II he served as expert consultant on foods to the Secretary of War and as director of Subsistence and Packaging Research and Development, Office of the Quartermaster General.

Dr. Proctor graduated as salutatorian from Malden High School in 1919. He received the degree of bachelor of science in Biology and Public Health at M.I.T. in 1923 and the degree of doctor of philosophy in 1927. From 1923–1926 he was an instructor in biochemistry at the Boston University School of Medicine and from 1925–1926 an assistant at M.I.T.

He became an instructor in biology and public health at M.I.T. in 1926 and an assistant professor in 1930. He was named associate professor of food technology and industrial biology in 1937, professor of food technology in 1944, and director of the Samuel Cate Prescott Laboratories of Food Technology in 1945.

In addition to the textbook, *Food Technology,* which he wrote with Professor Emeritus Samuel C. Prescott, '94, Dr. Proctor is the author of numerous papers published in leading scientific periodicals. He was associate editor of *Food Technology* from 1947–1949 and associate editor, Section III, *Refrigerating Data Book,* American Society of Refrigerating Engineers, 1950 edition.

Dr. Proctor is a member and fellow of the American Public Health Association for which he was chairman of the Food and Nutrition Section for 1938, and a member and fellow of the American Association for the Advancement of Science.

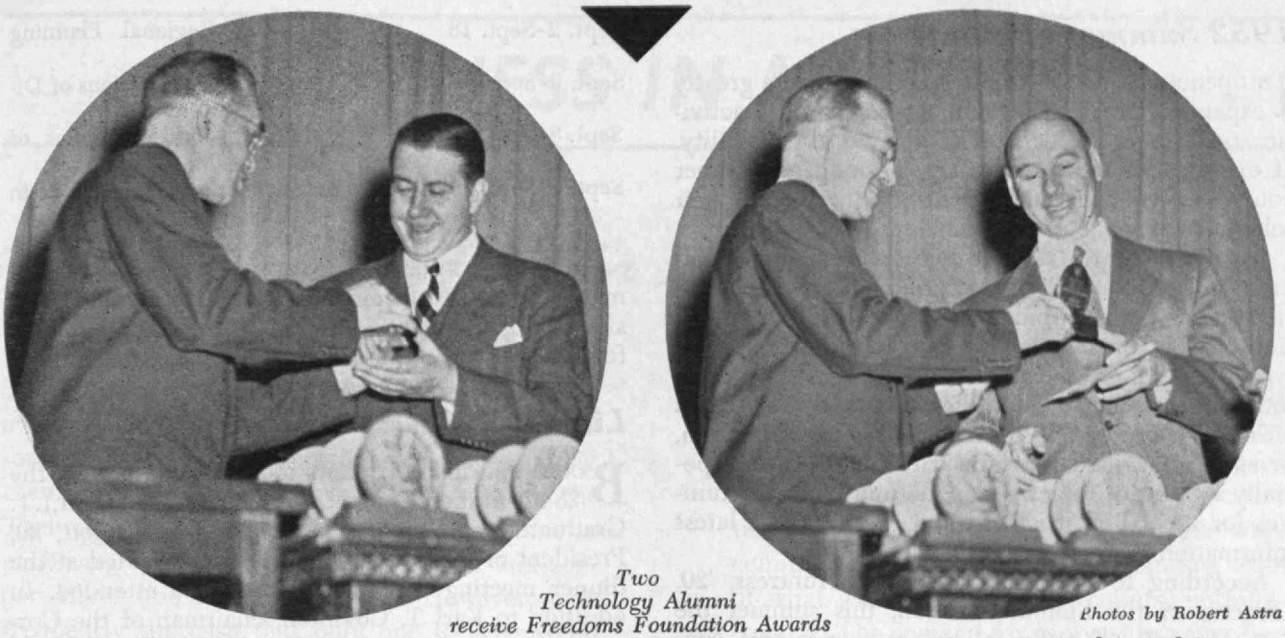
Grant Promotes Management Research

A GRANT of $1,000,000 to M.I.T.'s new School of Industrial Management, to be used exclusively for research and exploration in the broad fields of industrial management, has been made by the Alfred P. Sloan Foundation. This is the largest amount ever made available exclusively for research in this general area.

According to E. P. Brooks, '17, Dean of the School of Industrial Management, the grant will be of great significance in the development of the School of Industrial Management, which will open this autumn. The fund will be devoted entirely to research and exploration in the broad fields of industrial management and will focus attention on the need for advancing the frontiers of knowledge in the sphere of modern business. Dean Brooks added:

> The research, made possible through Mr. Sloan's [Alfred P. Sloan, Jr., '95] active interest in the progress of American industry through a better understanding of the complex problems of industry, will be undertaken within the long-established tradition of research, both pure and applied, at M.I.T.
>
> The existence of this stimulating program of exploration at the very beginning of the new School will, we are convinced, have an important influence on its Faculty. The spirit of the explorer is characteristic of good teachers, and exploration makes better teachers. Thus, the program will stimulate our present staff and attract other distinguished teachers. Not the least important influence of this research in industrial management will be its impact on the development of the curriculum itself.

The latest grant from the Sloan Foundation brings Mr. Sloan's gifts to the Institute over the past 30 years to a total of more than $8,300,000, and includes: grants for development of an aeronautical engineering laboratory; creation of the Alfred P. Sloan Fellowship program in business and engineering administration; and to establish a professorship in industrial management which bears his name. In 1946, Mr. Sloan made a grant of $225,000 toward construction of the Institute's Gas Turbine Laboratory and enlargement of the Sloan Automotive and Aircraft Engine Laboratory, to which he had already given more than $100,000. Further evidence of Mr. Sloan's broad interest in all phases of industry came in 1949 when



Two Technology Alumni receive Freedoms Foundation Awards

Photos by Robert Astra

from Harold C. Case, President of Boston University, in presentation ceremonies in Boston on April 1. At left, Dr. Case presents the Freedoms Foundation Award to James R. Killian, Jr., '26, President of M.I.T., for his valedictory address to the Class of 1950, "Our Shared Convictions." At right, Professor Joseph H. Keenan, '22, of the Department of Mechanical Engineering, receives an award for his article, "Education for Freedom." Both pieces of writing appeared in the pages of The Review.

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he made still another gift of $1,000,000 for the construction of a Metals Processing Laboratory, which is now nearing completion. The gift of $5,250,000 was made by the Sloan Foundation in December, 1950, to establish the new School of Industrial Management and to purchase the former headquarters of Lever Brothers Company in Cambridge to house it. The building has since been completely reconditioned, re-equipped, and (following its opening at the end of this month) will be known as the Afred P. Sloan Building.

The concept of the school, as originally outlined by Mr. Sloan, will be to correlate the complex problems of management in modern technical industry with science, engineering, and research. The objective will be to prepare young men of today better to meet the exacting demands of industrial management.

The Institute's long-established Department of Business and Engineering Administration will become part of the School of Industrial Management, and education will continue to be offered in the undergraduate field. In addition, the Institute will expand and amplify opportunities at the graduate level, leading to the degree of master of science in industrial management and perhaps other graduate degrees. The program will offer new possibilities for research in the various components of modern enterprise, taking advantage, in particular, of the exciting possibilities for investigation conducted by those with a managerial point of view in collaboration with those with an engineering and scientific background.

The Institute has invited the co-operation of an outstanding group of industrial executives in planning and conducting the School. They have been asked to contribute their managerial experience not only at the policy level but in bringing directly into the education those practical intangibles which, in the aggregate, comprise what we term management.

Alumni Day, 1952

LOYAL Alumni who return to Technology for Alumni Day on Monday, June 9, will have the opportunity of hearing Robert H. Winters, '33, of Canada, Minister of Resources and Development, as the principal speaker at the Stein-on-the-Table Banquet. Gifts from the 25- and 50-year classes will be received by Karl T. Compton, chairman of the M.I.T. Corporation, as the Classes of 1902 and 1927 hold especial celebrations at the banquet.

High light of the Alumni Day activities, the Stein-on-the-Table Banquet, will be held at the Hotel Statler in Boston. In keeping with past custom, those who attend will be able to add another distinctive Technology stein to their collections. The banquet will climax a program of events in Cambridge, including departmental reunions and inspection of such new facilities as the Metals Processing Laboratory, the John Thompson Dorrance Laboratory of Biology and Food Technology, and the Sloan School of Industrial Management where the new Faculty Club will be open to visitors. The Faculty Club is located on the top floor of the Sloan Building.

Following the program of last year, President Killian will deliver his annual report to Alumni at the luncheon in Du Pont Court. Also at the luncheon, Robert A. Vogeler, '37, Assistant Vice-president of International Telephone and Telegraph Company, will speak on his experience during 18 months of imprisonment by the Communists in Hungary. In the afternoon, President and Mrs. Killian will hold a reception at the President's House.

For the first time, the ladies will have their own special program, including a Ladies' Banquet at the Statler Hotel. Mrs. Vogeler will be the speaker at their banquet.

1952 Summer Session

In opening its doors for the second year to a greatly expanded program of summer educational activities, the Institute recognizes a threefold responsibility. It operates, as it has for years, a group of summer courses in order that its students may accelerate their schedules or make up deficiencies.

In addition to the regular undergraduate and graduate summer courses, special programs have been arranged for people from industry, research organizations, and other schools, to whom an intimate contact with the work of the Institute would be of particular interest and benefit. These programs – arranged either as more or less formal courses of instruction, or as informal and specialized conferences on especially significant topics – provide unusual opportunities for specialists to obtain and exchange the latest information in their chosen fields.

According to Professor Ernest H. Huntress, '20, Director of the Summer Session, this summer the Institute will offer the following courses and conferences:

Date	*Courses and Conferences*
May 26–June 6	Metal Cutting
June 3	Dedication, Metals Processing Laboratory Building
June 4, 5	Metal Cutting Conference
June 9–July 18	First Regular Summer Session Period
June 9–June 13	Surface Reactions in Flotation
June 9–June 20	Feedback Control Systems (Servomechanisms)
June 9–June 20	Internal-Combustion Engines
June 9–July 18	Theory of Games
June 16, 17	Speech Analysis Conference
June 16, 17	Building in the Atomic Age Symposium
June 16–June 20	Technique of Infrared Spectroscopy
June 16–June 21	Architectural Acoustics
June 16–July 3	Food Technology
June 16–July 5	Elastic High Polymers in Science and Industry
June 18–June 20	Soil Stabilization Conference
June 21–August 29	Second Regular Summer Session Period
June 23–June 27	Applications of Infrared Spectroscopy
June 23–July 3	Lubrication Engineering
June 30–August 8	Science Teachers Program
July 14–July 22	Survey of Aeroelasticity
July 14–August 8	Real Estate Appraisers Conference
July 21–August 1	Digital Computers and Their Applications
July 21–August 29	Special Functions in Mathematics
August 4–August 15	Vibration Problems in Mechanical Engineering
August 18–August 22	Electrical Methods of Instrumental Analysis
August 18–August 30	Industrial Photoelasticity
August 25–August 29	Optical Methods of Instrumental Analysis
Sept. 1–Sept. 5	International Symposium on Combustion
Sept. 2–Sept. 18	City and Regional Planning Conference
Sept. 3–Sept. 12	Theory and Applications of Dielectric Materials
Sept. 8–Sept. 13	Chemistry and Mechanics of Molding Materials
Sept. 8–Sept. 19	Aerodynamic Measurements in Mechanical Engineering

Additional information regarding these subjects may be obtained from the Director of Summer Session. Early registration is advisable, since facilities for some of the courses and conferences are limited.

Literati

Books and men of letters took the spotlight at the 288th Alumni Council meeting held at the M.I.T. Graduate House on March 31. Alfred T. Glassett, '20, President of the Alumni Association, presided at the dinner meeting which more than 100 attended. In addition to Karl T. Compton, chairman of the Corporation, who spoke of his recent trip to Mexico, speakers for the evening were Elting E. Morison, Associate Professor of English, and Vernon D. Tate, Director of Libraries.

Quickly dispatched as necessary orders of business were: the report by Donald P. Severance, '38, Alumni Secretary, who related that between March 6 and 28, nine M.I.T. representatives had visited 11 clubs from Worcester, Mass., to Mexico City; the report by Henry B. Kane, '24, that 6,600 Alumni have contributed $141,260 in the current Alumni Fund program; and the report by George Warren Smith, '26, on progress for Alumni Day, 1952 (recorded elsewhere in this section of The Review). Chenery Salmon, '26, spoke on the program of the Boston Luncheon Club.

As Director of Libraries at M.I.T., Dr. Tate spoke on the activities of the Institute's library which is called upon to meet the needs for general reading as well as for highly specialized engineering and scientific reading. The high cost of printed matter, greatly expanded volume of material in recent years, and the need to keep the library modern and active, without retaining excess obsolete material were discussed by Dr. Tate. With the completion of the new Charles Hayden Memorial Library, a substantial portion of library activities have been devoted to general and cultural subjects. The Music Lounge is one of the most popular rooms in the library, and the section on Industrial Relations indicates the expanded scope of the Institute's facilities. Dr. Tate spoke of the work of the Friends of the M.I.T. Library Committee, an Alumni Association activity whose primary purpose is to encourage Technology Alumni and others to assist the library in advancing its objectives.

Professor Morison, who since 1948 has served as director of the Roosevelt Research Project and as editor of *The Letters of Theodore Roosevelt*, spoke on the intensely varied and active career of the leader of the Roughriders. The brilliant and variegated career of Theodore Roosevelt was indicated in letters written in the White House which Professor Morison read. In one of these, Theodore Roosevelt warned of concentration of power for too long a time in the hands

(*Continued on page 370*)

(*Continued from page 368*)

of any administrator, however well meaning he may be; in another letter, he took pains to comment on the necessity for high moral principles on the part of public servants. The extracts were interesting for the light they shed on a former president, and also because they might well be re-emphasized today.

Civil Survey

GATHERING at the Institute on March 5 and 6, 1951, members of the Visiting Committee on the Department of Civil and Sanitary Engineering* held well-attended meetings.

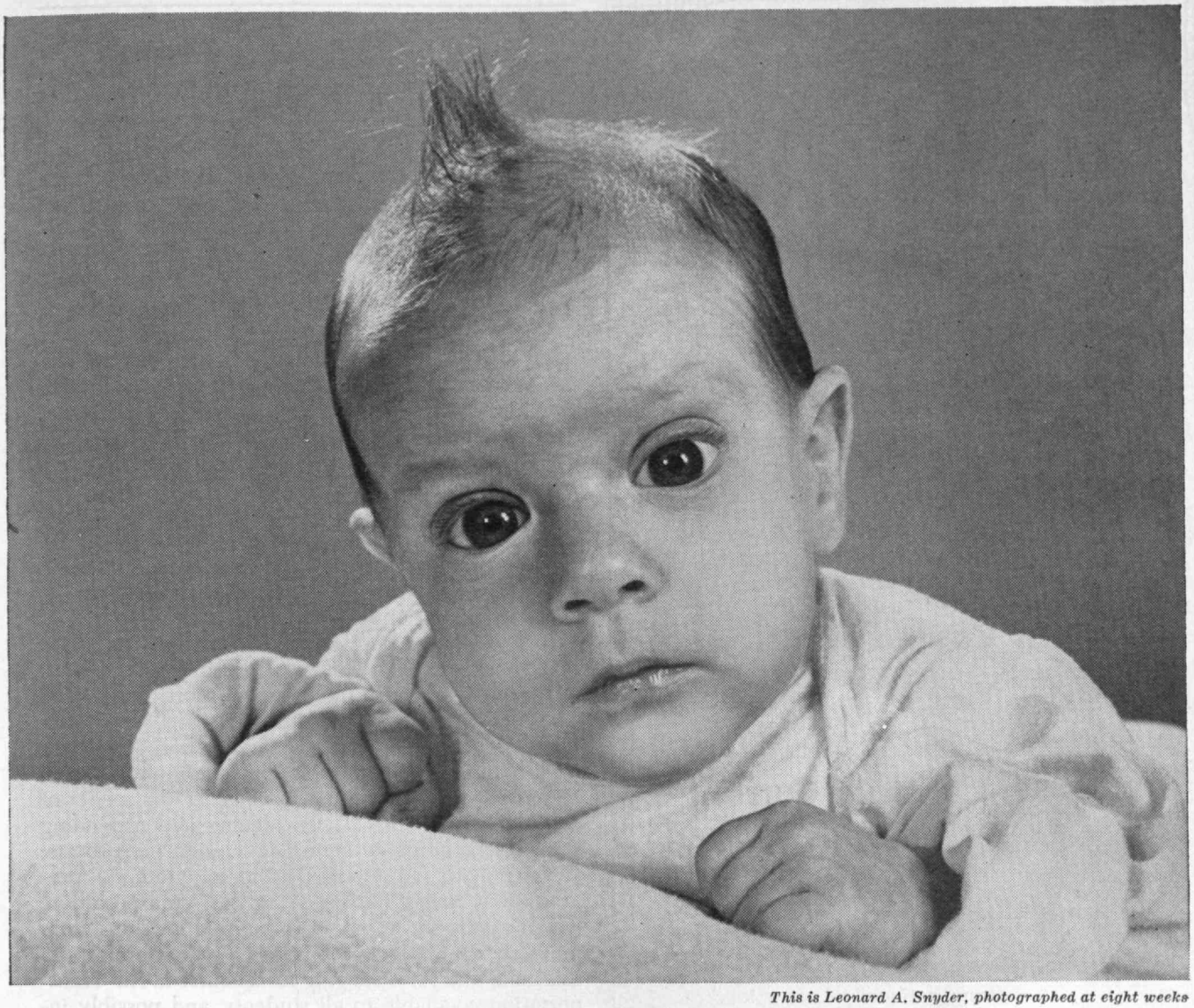
At the meeting on March 5, the Committee was joined by Professor Thomas K. Sherwood, '24, Dean of Engineering, in conferring on departmental matters with Professor John B. Wilbur, '26, Head of the Department of Civil and Sanitary Engineering. In the afternoon the laboratories and other facilities of the Department were visited. On the following day, the Committee conferred with the divisions of the Department in the following sequence: Soil Mechanics, Sanitary Engineering, Transportation and Surveying, Hydraulics, and Structures. Karl T. Compton, Chairman of the Corporation, James R. Killian, Jr., '26, President of M.I.T., Professor Julius A. Stratton, '23, Provost, and Dean Sherwood then joined the Committee and the staff of the Department at luncheon in the Campus Room of the Graduate House. Following the luncheon, the Committee held a brief final meeting in the Department's headquarters.

The Committee noted with satisfaction the continued growth of the Department, both as to volume of research and enrollment of students relative to total Institute enrollment. Of even greater significance is the splendid *esprit-de-corps* of the able staff that has been brought together under the continued competent leadership of Dr. Wilbur. It is a source of great encouragement to see these men working constructively in the creative environment that typifies the Department. The scope and significance of research projects now under way, several of which are of importance to our national defense, are particularly impressive. The cross-fertilization of ideas between Civil and Sanitary Engineering and other fields, such as chemistry, electronics, ceramics, medicine, and aeronautical engineering, is indicative of the vigor of these efforts. In this atmosphere the educational program of the Department is flourishing. It is clearly indicated that the scope of service of the Department has been broadened to a point that justifies the undertaking of the most important types of work and the attraction of the highest types of students.

The new Hydrodynamics Laboratory provides a setting that is capable of meeting the needs of a great center of hydrodynamics on the East Coast. Equip-

(*Continued on page 372*)

* Members of this committee for 1950–1951 were: Thomas C. Desmond, '09, chairman, Richard H. Gould, '11, Alfred T. Glassett, '20, C. George Dandrow, '22, George J. Leness, '26, Boris A. Bakhmeteff (deceased), and Thomas F. Farrell.



This is Leonard A. Snyder, photographed at eight weeks

INTRODUCING *The Youngest Telephone Share Owner*

BABY BECOMES PART OWNER OF A. T. & T. WHEN ONLY THIRTY-TWO MINUTES OLD

Little Leonard Snyder of Philadelphia, Pa., broke all known speed records in becoming a part owner of the Bell Telephone business.

Minutes after he was born on December 28, 1951, his proud father telephoned the news to his aunt. She was so delighted that she immediately telephoned an order for five shares of American Telephone and Telegraph Company stock for the new arrival. Thirty-two minutes after Leonard was born, the stock was purchased in his name.

He's much younger than the average A. T. & T. shareholder, of course. But in the number of shares he owns, he's just like thousands and thousands of others. For about half of all the owners of A. T. & T. are small shareholders, with ten shares or less.

The 1,100,000 owners of the Bell Telephone business are people of all ages, from all walks of life, in every part of the United States.

Thousands of churches, hospitals, schools and libraries and three hundred and fifty insurance companies also own A. T. & T. stock.

BELL TELEPHONE SYSTEM

(*Continued from page 370*)

ment from the old laboratory has been transferred to the new building, and it may be expected that equipment for special purposes will be a by-product of sponsored research. These sources will not, however, permit the acquisition of much of the apparatus needed for instruction and basic research. This is a matter that requires a special gift or appropriation.

The Department proposes to review the courses offered in applied hydraulics, both as to content and arrangement, and suggested that a special advisory committee be appointed to assist in this endeavor. The Committee believed this advisable since, in its opinion, there is a distinct shortage of well-grounded hydraulic designers and engineers. This is believed to result in part from a failure to integrate properly a basic knowledge of fluid mechanics with the broader problems that must be synthesized in design. This criticism is by no means directed to the Institute, and presents an opportunity to the Department.

In its report of last year, the Committee suggested that consideration be given to broadening the work of the Department in the field of airport design. The conference on Ground Facilities for Air Transportation held at the Institute in September, 1950, was most helpful in bringing this problem into focus. The Department now proposes to consider the merits of the following steps: (1) Broadening and expanding the present graduate course in Design of Airports; (2) Arranging an interdepartmental graduate program in Ground Facilities for Air Transportation, which might be supported through fellowships from industry; (3) Securing sponsored research projects in this field; and (4) Arranging for a course in Air Transportation, available to all students, and possibly included in the humanities program of the Institute. The Committee recommended that the Department explore these possibilities further.

It is noted that two practicing consulting engineers have recently joined the staff as part-time special lecturers. This appears to be an excellent move, and one that might well be expanded as circumstances warrant. A judicious use of the wide and practical experiences of similar part-time staff members can do much to enliven the teaching of a field such as Civil Engineering.

(*Continued on page 374*)

Among the things you take for granted...

The strong conviction instrument users hold for *measurements by* WESTON has its foundation in their own instrument experience . . . years during which WESTON instruments have given unfailing service . . . proved beyond doubt their unequalled precision, stamina and dependability. It is evident in the widespread preference shown for WESTON instruments for panel and built-in needs . . . where *so much* depends on the movement of a pointer. Regardless of the service . . . or the type, range or sensitivity of the instrument . . . truthful measurements and long, carefree service are *taken for granted.* Copy of panel instrument bulletin A7C gladly sent on request. WESTON Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

9360

(*Continued from page 372*)

The rapid growth of the Department over the past several years, and the high level of activity it now enjoys, cause both office and research space to be filled to capacity. While realizing that the space situation is acute for the entire Institute, it is hoped that relief can be afforded to Civil Engineering.

In summary, it may be stated that the problems now facing the Department are of a nature to be expected in an active group seeking to improve their work and broaden their field of service. The present condition of the Department merits our commendation. The continuing efforts of the Department to hold the gains they have made, and to increase their contributions to the total activities of the Institute, have our wholehearted support.

Closed Circuit

THE Visiting Committee on the Department of Electrical Engineering* met on January 19, 1951, in the Department's new Dugald Caleb Jackson Room. Those present included: members of the Committee with the exception of Joseph W. Powell who could not attend; Karl T. Compton, chairman of the Corporation, James R. Killian, Jr., '26, President of the Institute, Professor Thomas K. Sherwood, '24, Dean of Engineering – representing the Institute's Administration; and Professors Harold L. Hazen, '24, Head of the Department, Gordon S. Brown, '31, Associate Head of the Department, Carlton E. Tucker, '18, Executive Officer, and other members of the Department staff.

Charles A. Powel, who recently came to the Institute as lecturer, after a distinguished industrial career, reported on class work emphasizing the systems point of view, including general as well as technical considerations as a means of integrating and setting in perspective the students' earlier specific technical studies. He reported excellent student response to this point of view, both in class and in many personal visits to his office.

(*Concluded on page 376*)

* Members of this Committee for 1950–1951 were: Vannevar Bush, '16, chairman, Otto B. Blackwell, '06, Frederick E. Terman, '24, Ernest E. Johnson, Laurence K. Marshall, Joseph W. Powell, and Beauchamp E. Smith.

I am Industry—1952

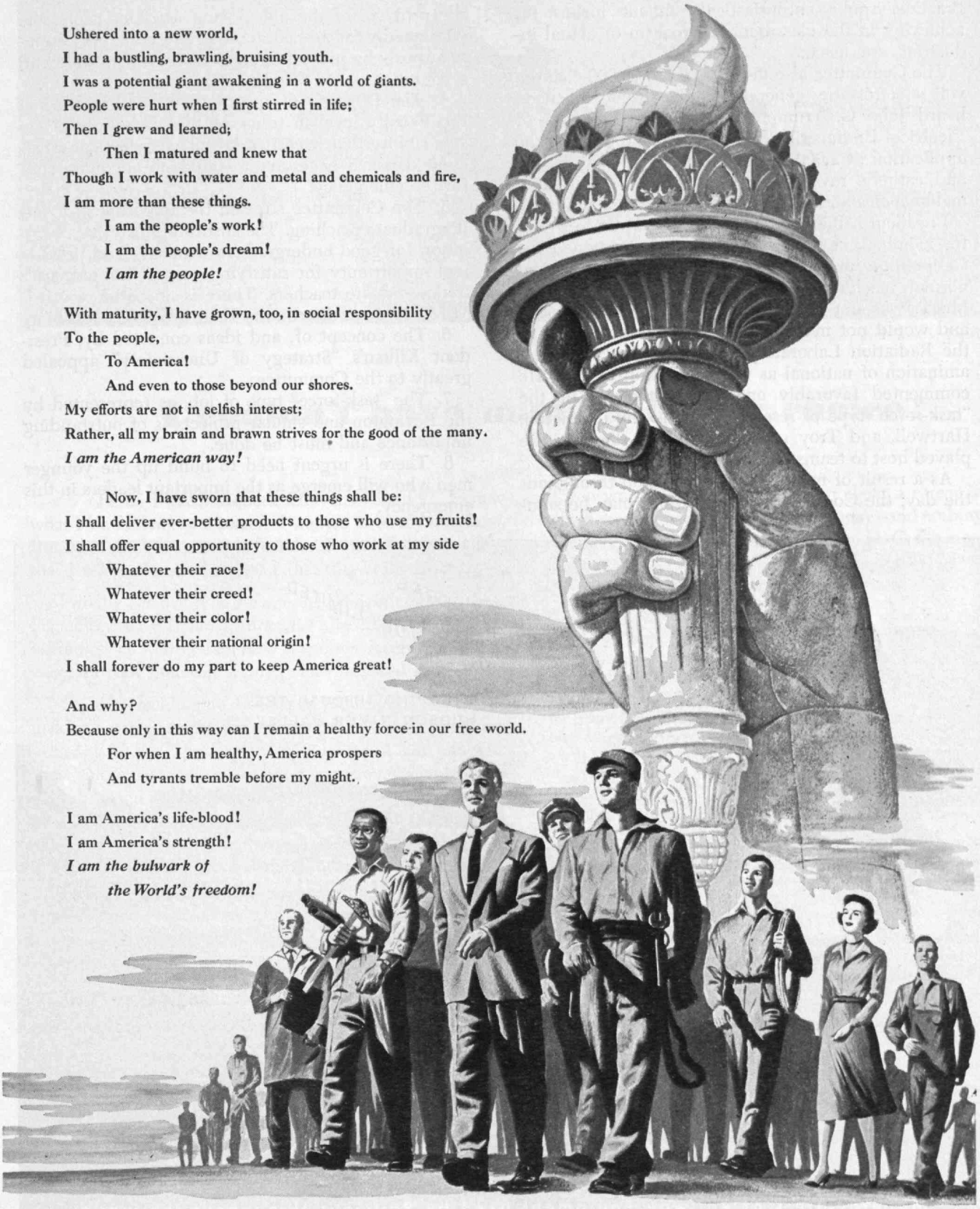
Ushered into a new world,
I had a bustling, brawling, bruising youth.
I was a potential giant awakening in a world of giants.
People were hurt when I first stirred in life;
Then I grew and learned;
Then I matured and knew that
Though I work with water and metal and chemicals and fire,
I am more than these things.
I am the people's work!
I am the people's dream!
I am the people!

With maturity, I have grown, too, in social responsibility
To the people,
To America!
And even to those beyond our shores.
My efforts are not in selfish interest;
Rather, all my brain and brawn strives for the good of the many.
I am the American way!

Now, I have sworn that these things shall be:
I shall deliver ever-better products to those who use my fruits!
I shall offer equal opportunity to those who work at my side
Whatever their race!
Whatever their creed!
Whatever their color!
Whatever their national origin!
I shall forever do my part to keep America great!

And why?
Because only in this way can I remain a healthy force in our free world.
For when I am healthy, America prospers
And tyrants tremble before my might.

I am America's life-blood!
I am America's strength!
I am the bulwark of
the World's freedom!



THE INSTITUTE GAZETTE

(*Concluded from page 374*)

Richard Kriebel of Polaroid Corporation who, as lecturer, was just completing the teaching of an elective senior course on Case Studies in Engineering Practice, spoke enthusiastically about means for achieving in the classroom the realism of actual industrial experience.

The Committee also visited the 12,000,000-electron volt electrostatic generator and, during luncheon heard John G. Trump, '33, Associate Professor of Electrical Engineering, report recent progress in the application of 2,000,000 to 3,000,000 volt x-radiation and cathode rays to the treatment of deep-seated malignancies and to sterilization of certain products.

President Killian reviewed progress at the Institute for members of the Committee, and mentioned the competition for staff between research programs and normal teaching. President Killian indicated that M.I.T. was not undertaking expansion of activities and would not manage a major laboratory, such as the Radiation Laboratory, without very careful examination of national as well as Institute needs. He commented favorably on the effectiveness of the "task-force" type of research, such as the Lexington, Hartwell, and Troy projects in which the Institute played host to teams of able men.

As a result of much serious discussion throughout the day, the Committee's observations may be summarized as indicated in the following eight items:

1. The Committee found the Department to be in sound condition and making excellent progress despite difficult circumstances.

2. The Committee urged continued effort along the present lines of teaching the "art of engineering" about which it is enthusiastic.

3. M.I.T. must examine and do something about the problem of the able young assistant professors who qualify for, but outnumber, the available permanent posts by providing opportunity for prestige and recognition.

4. The Department appears to be understaffed at the Faculty level in terms of the magnitude of responsibility that it carries. M.I.T. should take a calculated risk if necessary to build up adequate staff for the emergency.

5. The Committee stressed the importance of undergraduate teaching. The Institute must give recognition for good undergraduate teaching and provide real opportunity for satisfying careers for primarily undergraduate teachers. There is no better way for M.I.T. to serve the country than by quality teaching.

6. The concept of, and ideas connoted by, President Killian's "Strategy of Uncertainty" appealed greatly to the Committee.

7. The "task-force" type of job, as represented by the Lexington and similar projects is of outstanding importance and must be done.

8. There is urgent need to build up the younger men who will emerge as the important leaders in this emergency.

James W. Kennedy and family, Detroit

I couldn't have made a better choice!

After I left Marquette University in 1941, I knew what I wanted out of a career. I wanted to be my own boss. But most of all, I wanted to feel that I was helping people—that I was performing a service that they really needed.

I finally decided that the *one* field that offered me these big objectives was life insurance. Life insurance protects businesses as well as families . . . it often means the difference between financial security, and financial tragedy.

So, after deciding on a career in life insurance, I started making a survey of the various companies. I was much impressed with the New England Mutual men I met, and with their sincere enthusiasm for their company. I learned that New England was the first *mutual* life insurance company to be chartered in America, and that it offered liberal features that made its policy contracts most attractive to the buyer. I also learned that New England Mutual was one of the fastest growing companies in its field, and that it offered new men comprehensive training in all phases of the business.

I discovered that the company's continuing training program helps me to perform a real service to my clients. At the same time I'm getting a lot of fun and satisfaction out of my work and am providing a good living for my family. In fact, I'm happy to say that I couldn't have made a better choice!

James W. Kennedy

If *you* would like more information about a career in which your individual ability and industry—and nothing else—determine your income, write Mr. H. C. Chaney, Director of Agencies, 501 Boylston St., Boston 17, Mass.

• • •

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These Massachusetts Institute of Technology men are New England Mutual representatives:

Raymond P. Miller, CLU, '18, Salem **Blaylock Atherton, '24 Nashua**

New England Mutual would like to add several qualified Massachusetts Institute of Technology men to its sales organization which is located in the principal cities from coast to coast. If you are interested, write to Mr. Chaney as directed above.

The NEW ENGLAND MUTUAL

Life Insurance Company of Boston

MISSION TO JAPAN

(Continued from page 356)

Japan does produce the "five-and-ten-cent store," "made in Japan" article, but she also has master craftsmen who work in the finest tradition of master craftsmen. Damascene is but an illustrative example. Cloisonné and lacquer provide equally interesting stories.

One cannot omit from Kyoto impressions the lingering resonant bong of the temple bells that floats to one on the silence of early morning as the hours are struck. Apparent agreement to disagree on precise timing enables one to enjoy leisurely one after another of these deep-throated musicians.

A Sunday journey from Tokyo by train (Note for railroad enthusiasts: While in Japan I heard not a single connecting-rod clank, nor a locomotive exhaust in which one could discern the slightest irregularity of valve setting) to Nikko showed us probably the finest in Japanese religious architecture. Buddhist temples and Shinto shrines, whose pictures had conveyed to this writer only a vague impression of exotic Oriental peculiarity, became works of grace and beauty when seen in their native setting. Western plane roof surfaces become hard, cold, geometrical patterns in comparison with the delicate curves of the Orient.

But to gain full appreciation one should approach deliberately and slowly, as the Japanese insist by

(Continued on page 380)

MISSION TO JAPAN

(*Continued from page 378*)

their layout scheme. One leaves the world, so to speak, as he turns from the street under the torii to walk for perhaps a quarter mile before reaching the Nikko shrine area. This walk is a gentle climb along a wide pathway lined on either side with huge cryptomeria trees – relatives of our redwoods. Their high stately trunks leading to branches meeting far above are suggestive of an extended cathedral nave. One walks slowly because of the grade, and thus cannot but absorb some of the peace of the forest. Eventually, after steps, more torii, walks, and steps, one reaches a gate flanked on either side by a wildly grotesque wooden figure, a guardian of the gate, whose function is to fight off evil spirits. Beyond the gate lies a complex of shrines, temples, and more gates, among which one becomes lost in the splendor and richness of the various units. One, the Yomeimon Gate, "the gate where one tarries all day admiring, not noticing that the sun goes down," is a marvel of wood carving, color, and design. Hundreds of stories and dramas are portrayed in its carvings, any one of which rewards close study.

Interiors of shrines are extravagantly rich in the decorative arts of painting, carving, wood inlays, lacquer, and fabrics. A huge hall, 70 by 112 feet, in Rinnoji Temple, built in 848 A.D., houses three gilded Buddhas, the most elegant that we saw. Nikko's treasures benefit by the best care we found among the shrines.

Nikko owes much of its lavish artistry to the third Shogun of the Tokugawa Shogunate (1603-1868), who had the finest work done as a memorial to his grandfather, Iyeyasu, the first Tokugawa Shogun. During the period of this construction, 1624-1636, some 15,000 men were continuously at work. Such is Nikko, where one would enjoy many days in company with a scholar of its art.

For its natural beauty one cannot forget Matsushima Bay, near Sendai, north of Tokyo. The major contributors to its charm are the many islands, where wave-sculptured sandstone shores rise sheer to tops delicately decorated with those graceful pines for which we know Japan. The Japanese lovingly grow and train their garden pines, but nature produces similar results all about on mountain crags and – Matsushima islands. To this natural beauty are added the bridges, always with a graceful though some-

(*Continued on page 382*)

MISSION TO JAPAN

(*Continued from page 380*)

times barely noticeable arch, the native boats with strange sail or stranger sculling oar, and the mountains of the shore.

Best of all, the Army sergeant manager of the Park Hotel had a dinghy. To be sure, its standard of maintenance was not quite up to that of Jack (Walter C.) Wood, '17, Technology Sailing Master, but it was tight and definitely sailable. The sergeant didn't sail, but we did, and sailing among the islands of Matsushima Bay is highly recommended. One two-hour sample on a Saturday afternoon (urged on the author against a conscience troubled by the imminence of the final report) yielded much of his concluding Tokyo speech between that sail and dinner. Then on Sunday the major commanding the military police of the area sent his PT boat (made by Higgins Boat Company, New Orleans, La.), around to take us on a day's tour of the Bay with a few of our Japanese friends. Scores of islands, many with wave-cut natural bridges, all topped with shapely pine trees, some naturally sculptured miniature islands whose artistically curved faces proved that the waters carving them were Japanese, the large lemon-stripe lilies growing wild on inaccessible crags, these — and as always our group interested in everything that appeared or happened — made another memorable day.

Other extracurricular activities can be merely mentioned: several festivals besides the Gion Matsuri, all lush with beauty and color; wandering during odd half hours through the always fascinating and endless blocks of miniature streets lined with small shops selling Japanese necessities of life; the Kabuki or all-male-actor Japanese theater; the excellent professional fireworks for the American Fourth or any other even semiplausible excuse; memorable receptions given by the Minister of Education, university presidents, and industrialists; the Japanese dinners as guests of the prefectural governor or mayor of the city; the tea ceremony performed in the home of a society for preservation of classic geisha art; the folk dances in which young and old, gay kimonos and worker's rags, are mingled, each absorbed individually in the joy of rhythmic grace, yet automatically functioning as part of an orderly whole; these and others gave us glimpses of Japan.

(*Continued on page 384*)

MISSION TO JAPAN

(*Continued from page 382*)

Some Impressions

Serious questions about Japan and her future, whose answers we all seek, we had neither time nor opportunity to explore. Certain impressions, no more than straws in the wind, we did receive. These may have some slight significance or none.

The author can recall no case, during either official activities or ramblings where anonymity must have been complete, when he was aware of the slightest inhospitality or unwelcome. Part of this is, of course, attributable to traditional Japanese politeness, but not all. The Japanese on the street look well fed, cheerful, and at peace with themselves. We were told that three or four years ago these same faces showed dejection and hopelessness. One senses that many Japanese seek the real meaning of "democracy," not always successfully. The individual initiative and self-reliance essential to the practice of democracy are notions foreign to a culture based on rigid hierarchy and conformance to central direction. Yet the people seem eager to learn, and their history shows great capacity to adapt.

Japan's large industry, of which we collectively saw some 40 examples, varies widely in technological development. Very broadly, one can say that it resembles ours of the mid-thirties, though usually Japan has less laborsaving machinery for understandable reasons. Her industry must have foreign markets, for Japan can eat only if she can manufacture for export. In this, her position resembles that of England, without her dominions. Her natural market for bulk goods is Asia, which involves serious political problems. Another possibility visualized in the phrase "Japan, the Switzerland of Asia," is the production of superior specialty products for world distribution. Her clever and skilled labor, led by strong technology, could achieve such a result, and this is a genuine challenge to her engineering schools. The Communist attention given to her university students no doubt reflects the importance of just such an idea.

How do the Japanese feel about Hiroshima? We heard from them several times that, compared to the destruction of life and property from the largest of the incendiary raids, the Hiroshima damage was relatively modest. We were told by Japanese that something approaching 250,000 persons died in one of the several great Tokyo raids.

A story in The Review would not be complete without news of M.I.T. men. Our Mission can never forget the splendid hospitality of the M.I.T. Association of Japan as our hosts during our first week end. Immediately on the writer's arrival in Tokyo, he was visited by: Masaru Kametani, '25, President of the Association; Yoshinori Chatani, '22, Vice-president; and Takanaga Mitsui, '18, former President for many years. The result was the Hakone week end for the Mission previously mentioned, climaxed by a Sunday after-

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MISSION TO JAPAN

(*Concluded from page 384*)

noon tea and garden party with most of the members of the Association. Tatsuo Furuichi, '14, former President, and John K. Minami, '31, Secretary, and his wife and son, joined us on other occasions. George Yamashiro, '42, Associate Secretary, a member of the SCAP staff, served as interpreter and aide.

The results of the Mission are at best intangible. Years are required for change in education, and the relations between cause and effect are seldom demonstrable. We did leave with the feeling, supported by the tone of subsequent correspondence, that we had been able to convey something of the spirit and educational philosophy guiding our engineering education. We felt that we had achieved a closer than formal relation and that they were genuinely interested in our discussions. Certainly they showed us a quality of hospitality far beyond the call of duty, and gave us the sterling compliment of very hard work throughout the sessions held during their vacation period. Their "presentos," so generously bestowed upon us, were choice examples of fine Japanese handicraft, cherished for their intrinsic beauty, but even more for their expression of friendship and good will.

On our side, there is general agreement among the Mission members that good fortune was with us throughout, with the result that Japan for us is a high point of a lifetime. We left with a deep-felt wish for her every success as a free nation.

Members of Engineering Education Mission to Japan

Professor Charles W. Beese, Purdue University – Industrial Engineering.

Professor Arthur B. Bronwell, Northwestern University – Communications.

Professor William R. Chedsey, University of Illinois – Mining Engineering.

Professor Emeritus Alexander G. Christie, The Johns Hopkins University – Mechanical Engineering.

Professor Albert G. H. Dietz, '32, M.I.T. – Structural Engineering.

Professor Barnett F. Dodge, '17, Yale University – Chemical Engineering.

Dr. Homer L. Dodge, The Cabot Fund at Norwich University – Physics.

Dr. Rogers B. Finch, '41, M.I.T. – Textile Technology.

Professor Harold L. Hazen, '24, M.I.T. – Electrical Engineering.

Professor Alfred L. Miller, University of Washington – Mechanics and Structures.

Professor John A. Sauer, Pennsylvania State College – Engineering Mechanics.

Professor Ernest W. Steel, University of Texas – Sanitary Engineering.

Professor Harry B. Walker, University of California – Agricultural Engineering.

President Ford L. Wilkinson, Rose Polytechnic Institute – Administration.

Professor Emeritus Robert S. Williams, '02, M.I.T. – Metallurgy.

In addition to the foregoing members, Miss Dorothy E. Snavely, Assistant Director of Medical Projects, Unitarian Service Committee, served as Mission Executive Officer.

OF YANKEE GRANITE

(Concluded from page 364)

a high polish, but the builders of the Bunker Hill Monument desired no polish on their monument. Today, the surface of the monument shows faint, well-weathered lines, like those produced by the modern bushhammer, which has a head made of several thin steel plates bolted together, each sharpened to a cutting edge. In England during the period, flat iron bars with rough edges were in use to saw softer stone than granite, and at Quincy, Willard experimented with dressing machines. The conclusion may be drawn, however, that the stones which we now see on the monument were undoubtedly shaped to their present dimensions by hand.

Today, 110 years after its capstone was put in place, the Bunker Hill Monument stands as an impressive testimonial to the conservative judgment of its designer, Loammi Baldwin, and the painstaking fidelity of the man who supervised its construction, Solomon Willard. An engineer familiar with its maintenance states that there is no evidence of settlement, and that a check by surveyor's transit revealed no signs of misalignment. Its joints occasionally need pointing, the last pointing being performed about 20 years ago. Various iron or steel members of the observation chamber have had to be replaced. Its lightning rod has been in place for many years, but there is no readily available record to check whether the monument has ever been struck by lightning. With their empirical methods of design and their crude, mostly hand-operated, construction apparatus, our forebears built a sturdy structure, which, barring an earthquake, should last for centuries.

Part II, the conclusion of this article, will appear in the June, 1952, issue of The Review.

HAVING WRIT, MOVES ON

(Concluded from page 358)

All office communications of importance and a considerable amount of personal writing are now conducted via this modern, compact, keyboard machine. The typewriter has had an interesting development and its introduction has had far-reaching effects socially as well as in the field of business. The typewriter was the first important machine for office use; as such it served to stimulate speed of business communications. By introducing mechanization into the office, it also paved the way for the subsequent development of modern business machines. Its general acceptance was responsible for first opening the doors of the business world to women, who soon became virtually the exclusive manipulators of these machines.

But it is evident that change is the only permanent characteristic of whatever methods man employs in his personal writing. Man is quite willing to use the best facilities at his disposal so long as nothing better is available. But progress in the field of writing is as inexorable as in any other field, and each new mechanism has its period of maximum utility. Of each instrumentality we may conclude ". . . and having writ, moves on."

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Alumni AND Officers IN THE News

Authors and Speakers

The relationship of engineers and engineering to science and the humanities is discussed in a book entitled *Engineers and Ivory Towers* by HARDY CROSS'08, professor at Yale University, with Robert C. Goodpasture as coauthor. Published in 1952 by McGraw-Hill Book Company, Inc., New York, the many topics discussed include graduate study, the application of standardization, and the responsibilities and obligations of engineers.

Four Technology men took part in an all-day symposium of the American Chemical Society at its annual meeting on March 25. BRADLEY DEWEY'09 spoke on "Industrial Production"; JOHN B. CALKIN'32 presided; WALTER C. Voss'32 spoke on "Construction for [the] Chemical Industry in New England"; and LYLE C. JENNESS'37 gave an over-all survey of New England's natural resources.

Humanology is the title of a book written and published by WILLIAM A. RHODES'12, in which the author "endeavors to present a clear, effective theory of human relations and to derive valid guides in business, labor, government and education." It is uniquely written in free verse.

FREDERICK H. NORTON'18, Professor of Ceramics in M.I.T.'s Department of Metallurgy, wrote *Elements of Ceramics*, published by the Addison-Wesley Press, Inc., of Cambridge, Mass. (1952).

EDSON I. SCHOCK'21 has had published a book entitled *How to Build Small Boats* (New York, N.Y.: A. S. Barnes and Company, 1952).

JAMES DONOVAN'28 wrote an article, "Engineering Concepts of Continuous Processing," published in Volume VI, No. 1, of *Food Technology* (1952).

ROLF ELIASSEN'32, Professor of Sanitary Engineering at M.I.T., wrote an article for the March, 1952, issue of *Scientific American* entitled "Stream Pollution."

WALTER C. Voss'32, Head of the Department of Building Engineering and Construction at M.I.T., spoke on the topic, "Education – Technical Institution or College?" before the high-school principals of Greater Boston on March 21.

REINHARDT SCHUHMANN, JR.,'38, Associate Professor of Process Metallurgy at M.I.T., has had published Volume I of a book entitled *Metallurgical Engineering* (Cambridge, Mass.: Addison-Wesley Press, Inc., 1952).

GARRY C. MYERS, JR., 2-44, is coauthor of a new book on helicopters, *Aerodynamics of the Helicopter*, published by Macmillan Company of New York (1952).

Engineer Explorer

A far cry from the field of mechanical engineering are the adventurous trips that HECTOR R. ACEBES'47, Course II, has taken. In the March 25 issue of *Look* magazine is an article entitled "Orinoco Adventure," describing a recent trip taken by Acebes in which he set out to discover the headwaters of the Orinoco River in South America. Traveling most of the way in a dugout, with eight helpers accompanying him, Acebes recorded his experiences with photographs of jungle people never before seen by outsiders, the Guaicá Indians. Acebes has made five previous trips into the South American jungle and has also journeyed through most of the unchartered lands of Africa.

Honors and Promotions

The oldest aviation organization in the nation, the Aero Club of New England, named GODFREY L. CABOT'81 honorary president at a meeting on March 27. Dr. Cabot, who is 92 years old, has been a firm supporter of aviation since the time of the Wright Brothers, and, in recognition of his many valuable contributions to the progress of aviation, Mayor Hynes of Boston presented him with a plaque. In addition to being a past president of the Aero Club, Dr. Cabot is a former president of the National Aeronautic Association and the Federation Aeronautique Internationale.

The 80th birthday of SAMUEL C. PRESCOTT'94 was honored on April 2 by 17 colleagues and former students gathered at the Smith House in Cambridge. Boston newspapers took notice of the occasion by publishing summaries of Dr. Prescott's outstanding work in food technology during his active years of teaching at the Institute.

JOHN PARKS COE'13 was presented with the 1952 award of the Commercial Chemical Development Association on March 20. Mr. Coe has been particularly active in the field of synthetic rubber development.

ARTHUR W. JOHNSON'14 has been elected vice-president and secretary of the State Mutual Life Assurance Company of Worcester, Mass.

C. RICHARD SODERBERG'20, of the Department of Mechanical Engineering at M.I.T., was awarded the John Ericsson Medal at the 64th annual meeting of the American Society of Swedish Engineers. The medal is awarded semiannually to outstanding engineers and scientists of Swedish descent.

Secretary of Commerce Charles Sawyer awarded the meritorious service silver medal of the Department of Commerce to Donald A. Rice'32 for "leadership in this country in the application of gravity measures to problems of the figure of the earth, and for outstanding work in the development of methods and analyses pertaining to radar trilateration."

ROBERT C. SEAMANS, JR.,'42, Associate Professor of Aeronautical Engineering at Technology, received the Lawrence Sperry Award, given annually "for a notable contribution made by a young man to the advancement of aeronautics."

Obituary

ALLAN C. SARGENT'81, March 5.
HENRY P. MERRIAM'86, February 28.*
EVERITT K. TAYLOR'88, March 21.
HARRY E. SMITH'87, March 14.*
ALBERT F. BROWN'90, February 3.*
GEORGE L. NELSON'90, date unknown.*
ALEXANDER W. MOSELEY'91, February 28.*
ARTHUR W. DEAN'92, March 20.*
J. WINN BROWN'93, March 3.*
GEORGE L. WALKER'93, January 27.*
PERCIVAL M. CHURCHILL'95, February 13.*
EDGAR H. BARKER'96, February 10.*
WILLIAM L. BUTCHER'98, February 27.
JOHN DEL. UNDERWOOD'98, January 21.*
HAVEN SAWYER'99, March 9.*
FRANK W. GREEN'01, February 16.
AUGUSTUS C. FOSTER'04, December 31.*
HARRY S. FOLAND'05, June 9, 1950.*
HAROLD P. HART'05, February 10.*
ELLIOT LUM'05, December 8.*
WILLIAM E. H. MATHISON'06, February 8.*
RUTHERFURD BINGHAM'07, January 3.*
ALBERT S. HAMILTON'07, December 26, 1948.
LAWRENCE A. CLARK'08, about eight months ago.
GEORGE E. TOLMAN'08, November 30.
THOMAS B. BLACK'09, February 18, 1951.*
JOHN M. HATTON'09, January 30.*
H. USHER MILLER'09, November 3.*
HAROLD R. WILBUR'10, February 12.*
THOMAS B. LAWLER'12, December 25.*
OLIVER C. LOMBARD'12, February 10.*
ALLISON P. SMITH'13, February 12.*
JOHN H. MACKINNON'14, February 27.*
PALMER ST. CLAIR, JR.,'14, August 11, 1951.
CLARENCE E. BASSETT'18, March 7.
JULIUS GOTTLIEB'18, February 17.*
PERRY B. BRYNE'19, March 14.
KENSKE HASHIMOTO'20, date unknown.
J. STERLING KELLEY'22, December 8.*
H. WEBSTER THOMAS'24, March 6.*
MYRON N. HANOVER'25,, in March.*
CLARENCE F. LATHAM'25, February, 1949.*
HENRY E. PRADY'25, January 3.*
BRANDT W. WILSON'25, May 29, 1951.*
WILLIAM H. MAGRUDER'26, February 5.
JAMES L. MCGEHEE'40, February 25.*
DOUGLAS K. CRAWFORD'42, February 21.
CANTWELL O. MADDOX, JR.,'51, February 14.*

**Mentioned in class notes.*

News FROM THE Clubs AND Classes

CLUB NOTES

Boston Luncheon Club

The attendance at the 1952 meetings to date, held on the third Thursday of each month at the Union Street branch of Ye Olde Oyster House, has been increasing very satisfactorily and the programs at least are as interesting as any of the previous ones. On January 17, 30 men sat down to an excellent (99-cent) meal after which F. Leroy Foster'25 told us of sponsored research at the Institute. It was very instructive. On February 21, we had 42 men out to hear Professor Emeritus G. B. Waterhouse speak on "Titanium the Glamour Metal." This was not only very interesting, but possibly of financial value to some, as he gave us the inside information as to some good stocks to invest in.

On March 20 we reached the record in attendance, 53 coming out to hear T. W. Lambe, 2-44, Assistant Professor of Soil Mechanics, talk on "Chemical Soil Solidification." This, to many, was a brand new idea, ably and openly presented by a man on the inside in research developments. At the April 17 meeting, E. F. Bowditch, Dean of Students at M.I.T., spoke on "Educating the Whole Man at M.I.T." It is the hope of the officers who have been carrying the responsibility of trying over a period of four years to make a substantial and representative organization of the M.I.T. men in downtown Boston, that they will be succeeded by a new and younger group, who will be able to broaden the idea of a well-attended daily luncheon club. — FRED W. GOLDTHWAIT'05, *Secretary*, 274 Franklin Street, Boston.

The M.I.T. Club of Chicago

The Chicago Club, on February 16, 1952, again endeavored to provide a meeting that had some unusual interest in it. We believe it succeeded, although the size of the turnout was not a fair measure since the circumstances under which our host was operating necessitated limiting the crowd. We spent that date, a Saturday morning, going through Western Electric's Hawthorne Works in Cicero, suburb of Chicago. It is a large operation employing upwards of 20,000 people, and, of all the departments visited, the cable, or wire drawing, was most spectacular. In addition, our hosts gave us a good idea, lecture-wise, as to Western Electric's organization and its association with the Bell System. To satisfy the inner man as well, we were asked to stay for lunch — and gratefully accepted! Those who visited Hawthorne were: A. S. Alschuler, Jr.,'35, John H. Becque'48, Anatol Bigus'49, Yale Brozen'38, Walter D. Burger'27, Winston R. Burrows'26, P. L. Coleman'23, J. M. Cosgrove'22, Johnson Couch'33, J. Kail Crane'48, Dana Devereux'36, Lee H. DeWald, G. Russell Eddy'33, Bradford Endicott'49, James P. Ferrall'17, R. J. Gillmeister'49, H. J. Goldsmith'18, Arnold Greenberg'50, Edwin D. Hale'16, Sten Hammarstrom, 2-44, Charles Hanson'50, Dave Hardin'49, A. H. Hayes'29, Steven Heller'43, John I. Herlihy'39, Albert Hess, 2-44, Harold B. Higgins, 2-44, R. H. Hinchcliff, 10-44, Bonner Hoffmann'40, J. R. Hooper'27, Bruce Humphreville'26, George M. Illich, Jr.,'42, Louis E. Jones '32, Robert Y. Jordan'37, Albert L. Kaye '31, B. J. Kirkwood'49, Raymond Koch'41, Lester Kornblith, Jr.'38, B. D. Kribben'33, Jerome D. Krinsky'49, John W. Lane'31, Andrew J. Laska, L. B. Lea, 2-46, Peter L. Loewe'31, John B. Malloy'50, R. H. Martz'28, David McLellan'37, F. R. Meyer'42, W. A. Meyer'32, Clarke C. Miller'23, William B. Murphy, William R. Niedhamer'45, Frank O'Neil'25, Jack C. Page'48, Harvey Pardee'09, Peter Parker '33, Robert Peach'47, Charles E. Peterson '25, W. H. Phillips'39, John H. Pomeroy '49, John G. Praetz'28, D. D. Rodger'48, G. D. Rose, Jr., 9-46, B. B. Russell'43, Leonard W. Russum'47, J. J. Ryan'35, William R. Schuler'40, Walter Schwab'51, Lou Sheldon'25, Robert L. Silberman'48, Curtis Smith, D. K. Taylor'26, George F. Tomlinson'49, Samuel Untermeyer'34, Albert P. Van der Kloot'42, Paul Wang'30, H. M. Weddle'29, J. T. Weills'43, John H. Wills'26, Robert B. Wolf'50, Carlton E. Wood'29, David Yablong'47, and Rouholah Zargarpur, 9-46.

Our thanks to Messrs. Ralph Berg, Homer Brown, G. S. Hemsted, and the other Hawthorne personnel who made the trip such an enjoyable one.

The Chicago Club is organizing an effort to assist the Institute in interesting a wider group of high-school graduates-to-be in going to M.I.T. Under Dick Meyer'42 as chairman of the Steering Committee, the entire club membership has been canvassed as to their interest in helping, and, if affirmative, what secondary schools they would be willing to contact. The response has been very encouraging and it is hoped that some noticeable effect will be produced even by June, 1952. Incidentally, if there are Chicago club members or potential members who have not been contacted and who are interested in helping, please let the writer know. It involves "selling" M.I.T. to the present generation of high-school students, and shoe leather and resiliency of purpose are no less important than interest in and knowledge of the Institute. — HARLAN H. DAVIS'40, *Secretary*, Precision Rubber Products Corporation, 400 West Madison Street, Chicago 6, Ill.

M.I.T. Association of Cleveland

Jack Wood'17, Technology sailing master, made our early spring dinner meeting a tremendous success with his colored moving pictures and marvelous personal dialogue. Jack came to Cleveland to show the local Alumni, wives, and many guests (there was a total of 100) the important part dinghy sailing plays in the extracurricular lives of our students. The outstanding competitive success of our fleets has created a pre-eminent spot for M.I.T. in the naval sporting world, and, coupled with Jack's grand personality and background, there was a packed house for the evening. The pictures included not only shots of Basin racin' but also took us on a first-hand voyage with a Bermuda race yacht during one of the many races in which Jack has taken part. In addition to the personal guests of the Alumni, we had Captain H. C. Moore, who is the commanding officer of the Coast Guard in this area. He and Jack Wood laid the plans for the sailing fleet now at the Coast Guard Academy in New London, Conn. We inaugurated another idea which may become an annual event by having invitations extended to some of the local high schools to send one or two seniors to our dinner meeting as our guests. Some of our Alumni, interested in educational counseling, accompanied the boys.

Those who were at the dinner may not all be listed below because of a slight irregularity in our procedure that evening, but the ones recorded are: N. D. Baker '16, D. P. Beurret, J. Dauson, G. E. Durham, F. J. Evans'13, W. M. Fitz-Gibbon, J. E. Farmer, C. Y. Goss, A. Homans, J. L. Myers, R. Olmstead, J. G. Paulin, E. M. Sain, H. D. Stecher, F. Steger, H. C. Stier, G. W. Wattles, Jr., R. E. Williamson, J. Wood, P. Young, J. E. Johnson'08, E. Q. Adams'09, A. M. Eicher'12, C. B. Rowley'12, A. J. Hoyt'14, C. H. Reed'20, J. W. Gartland'21, W. G. Loesch'21, G. P. Schumacker'22, W. F. Munford'23, R. H. Smith'23, C. E. Herrstrom'24, H. M. Bush '26, W. C. Sessions'26, H. P. Ferguson'27, V. W. McDaniel'29, T. R. Wigglesworth '30, D. S. Connelly'31, G. R. Young'37, H. A. Zimmerman'37, J. P. AuWerter'38, F. W. Reuter'38, M. G. Magnuson'39, M. F. Miller'41, J. S. Ewing'42, R. J. Fay '42, C. H. Smith'42, J. S. Stewart'42, E. T. Schoenwald, 2-44, E. A. Reed, 6-45, L. N. McKibben'49, T. E. Weil'49, Kent Moore '50, J. T. Van Dorn. — G. RICHARD YOUNG '37, *Secretary*, 300 East 131st Street, Cleveland 8, Ohio.

Indiana Association of the M.I.T.

Another Ladies' Night, which events are becoming increasingly popular with the Indiana Club (or should we say by overwhelming demand of the wives) was — and this is serious — enjoyed on February 21. Ray Ramsey'17 was responsible for securing excellent accommodations at the Athenaeum Turners Club, and all agreed that the food and refreshments were extraordinary. An interesting color motion picture on the manufacture of drugs and biologicals was shown by Herbert Tope of the Eli Lilly Company. The ladies saw color and pills; the engineers, many familiar machines, mixers, and materials-

handling methods. — EDGAR B. GODLEY '26, *Secretary*, 6025 North Oakland Avenue, Indianapolis 20, Ind.

New Haven County M.I.T. Club

The efforts and generosity of Mrs. Frances Roth and Eben Haskell'26 again made it possible to hold our February 20, 1952, meeting at the Culinary Institute (formerly the Restaurant Institute) in New Haven. The splendid food and excellent service always makes this one of the year's best-remembered meetings. President Fred Brooks'31 secured our speaker, Mrs. Ruth W. Metraux of the Gesell Institute of Child Development. Mrs. Metraux discussed "The Child from Year to Year." In the informal discussion which followed the talk, it was quite evident that our speaker had struck a very responsive note and that her talk was very much appreciated.

The following members were present with their wives: Fred Brooks'31, Ray Edwards'39, Eb Haskell'26, Tom Hayes'25, Cliff Lytle'37, Al Libbey'26, Dick Maconi, 2-44, Harry Mardoian'19, Frank Nettleton'30, Roy Parsell'14, Herb Polleys'18, Roger Purssell'28, Jack Purinton'41, Art Rowley'38, Milt Robins'47, Haig Solakian '17, Mrs. C. E. Smith, Waynard Vosper '26, and Walt Wojtczak'37. — DAVID G. BLACK, JR., 6-46, *Secretary*, Rural Free Delivery No. 2, Bethany, New Haven 15, Conn.

The M.I.T. Club of New York

Bob Vogeler'37 discussed some of his experiences behind the Iron Curtain for us on April 3. His imprisonment in Hungary has taught us all a lesson which, it is hoped, will not be forgotten. Mr. Vogeler, who is now a member of the Club, is on leave from International Telephone and Telegraph to bring his experiences home to the nation. Our annual meeting is set for May 13th. Dean Brooks'17 will be here to tell us about the new School for Industrial Management. The Alumni have been extremely interested in this new school, and we welcome the chance to find out more about it. — RALPH C. WILTS'41, *Secretary*, American Blower Corporation, 50 West 40th Street, New York, N.Y.

M.I.T. Club of Puerto Rico

Horace S. Ford, Treasurer Emeritus of the Institute, was guest of honor and principal speaker at a dinner meeting of the Club held on Saturday, February 18, at the International Airport in San Juan. Uncle Horace's visit caught the Club at a time when many of the members were either on business or vacation trips out of the island, or recuperating from the exertions of the carnival week end. However, we mustered enough for a very congenial evening, supplemented by Orlando C. de Aragon'39 from Cuba, Antonio Cruz Kayanan'42 from the Philippines, and Gordon A. Pope'39 from the United States.

Mr. Ford was introduced by Club President Antonio S. Romero'12 for an informal but a most interesting and inspiring talk about M.I.T. of today and its plans and hopes for the future. Mr. Ford's words led to a general discussion of how the Club can best serve the interests of M.I.T., a discussion which lasted until about 11:00 P.M. when the meeting was adjourned. — CESAR S. CANALS'26 *Secretary*, Frederick Snare Corporation, Medical Arts Building, San Juan 28, Puerto Rico.

Washington Society of the M.I.T.

Stag night for the Washington M.I.T. Alumni is generally lively and interesting. This year, the January 16 stag meeting surpassed previous ones.

Richard McKay'21 was program chairman, assisted by Henry Martin'11, with Alden Waitt'14 and Gilbert Devey'48. A pair of glamorous and lovely songsters with piano, accordian, and guitar accompaniments — Kay Poppell and Pat Searles — entertained 74 Alumni, adding much conviviality in festival fashion.

A buffet supper of turkey and ham with plenty of embellishments, bolstered by Budweiser beer, was served. Anheuser-Busch generously showed a couple of movie shorts. Fred Untiedt'22 displayed a clever array of magician's artistic tricks. A golf machine for registering length of drives, together with a county-fair paddle wheel and a nonprofessional roulette wheel, using stage bills, was introduced for the betting fraternity. An old-time auction of novelty items, ranging from canasta sets to valuable leather traveling bags, and so on, donated by Jack Plugge '29, was conducted by Bob Thulman'22. Everybody had some fun while the bills and wares lasted.

The Chesapeake and Potomac Telephone Company Glee Club of 30 men sang a group of college songs and standard favorites splendidly under the able direction of their outstanding leader, Bob Davidson. Our own Alumni joined the Glee Club in a finale of Technology songs, rounding out an evening of good cheer to be well remembered by everybody. — GEORGE W. STONE'89, *Secretary*, 410 Cummings Lane, Chevy Chase 15, Md.

CLASS NOTES

• 1886 •

The Secretary of the Class has another death to report, that of Henry P. Merriam. His cousin, Mrs. William E. Clough, with whom Merriam had been living in Hubbardston, reports that he died there on February 28. It may be remembered that Mrs. Chase and I called on Merriam in Hubbardston in July, 1950, and found him very pleasantly located in his cousin's home and very interested in the doings of the members of '86. The following notes are taken from the Gardner, Mass., *News* of February 28, 1952: "Henry Parker Merriam, 88, internationally known inventor and engineer, died this morning at the home of his cousin, Mrs. Wm. E. Clough, Common Street, Hubbardston. He had lived here 18½ years following his retirement in 1930. A member of the second graduating class in electrical engineering at M.I.T., Mr. Merriam was engaged in several experimental projects with government agencies and private enterprise. He was particularly noted for his development work on fuses, bomb sights and heavy guns for the U.S. armed forces. His inventive genius made him a known figure in England, Germany and Norway. Upon graduating from M.I.T. in 1886, he became a member of the American Society of Mechanical Engineers. Believed to be its oldest living member, he was to have been honored by the Society in May of this year." The following is quoted from a personal note from his cousin: "He lived very quietly by himself following the death of his wife in January, 1934, in Rochester, N.Y., where they had spent the winter. During the second World War, from 1943–1944 he worked in a small shop making very close tolerance [*sic*] parts for the Navy torpedo program. His work was so accurately done on the lathe, which he brought here from New York when he came here to live in 1933, that the Navy inspectors never rejected a single piece — and there were thousands of them, so small that the count was by weight instead of number. He enjoyed the work. Most of all he felt useful; he was doing something to help along the war effort. In the fall of 1945 he underwent a serious operation at the Henry Heywood Memorial Hospital in Gardner; he was 82 at that time, and came through in fine shape but of course did not attempt to do any work, only what he wanted to around his rooms. He was taken sick in June, 1948, while visiting in Suffield and came home with a serious heart condition which grew gradually worse, although he was up and around. He was a member of the American Society of Mechanical Engineers, which he joined while in his last year at M.I.T., and was to have received an award from them in May in honor of his 66 years of membership. If I understand correctly, the award will be sent to me and will be given to his niece. He was a very fine gentleman and we miss him very much."

In previous class notes I have spoken of Ingalls and his interest in the investigations going on in Saugus, Mass., where the first iron works were located. It was my privilege to hear the engineer in charge of the excavation give a very interesting illustrated (color) lecture on the development to date, before the New England Historic Genealogical Society. In later conversation with the lecturer, I found that he not only knew Ingalls, but was taking his pictures and notes to discuss with him (Ingalls) since he (the engineer) makes frequent reports of the work of digging out the old foundations of the mill and restoring the site, as far as possible, to its original condition. I wrote Ingalls and received the following information about his early interest in local metals, particularly zinc: In 1886, when Ingalls was a senior at M.I.T., he wrote his thesis on the metallurgy of zinc. In 1903 he published a treatise under that title, which was the first on this subject to appear in any language, and was of educational influence. Professionally engaged with that metal, nationally and internationally, he has been called the "dean of the American zinc industry." A coronary thrombosis in 1947, from which he made a good recovery, compelled his retirement at the age of 83. Since then he has been occupied

with estate management and the study of colonial history of Massachusetts, especially industrially. He was influential in the research of the Hammersmith iron works at Lynn (Saugus) and the restoration of them as an historical monument, which work is being undertaken by the American Iron and Steel Institute at large expense. The Hammersmith works, financed in London and aided by the government of the Bay Colony, has heretofore received only scant attention by historians. It is now proved to have been a complete plant, spreading over a large area and occupying 100 or more men. During its period of operation, from 1645 to about 1663, smelting bog iron ore with charcoal, it furnished the colony with a substantial tonnage of pig iron, converted into castings and wrought products, including nails, for which there was sharp need. The deposits of bog ore in Saugus did not prove to be as large and lasting as expected. However, men learned iron smelting at Hammersmith and instituted it elsewhere.

In the January issue I wrote of the death of Orrin Doolittle in Yonkers and quoted from a local paper sent me by a Yonkers friend. This same friend has sent me another clipping in relation to one of Doolittle's daughters, Jane Doolittle, who has recently returned on a special furlough from Teheran, Iran, where she has spent most of her time for 30 years in teaching and allied occupations. The clipping does not tell whether she arrived in time to see her father before his death, but we hope she did.

This seems to be all the news in relation to '86 classmates, although there must be much of interest available if we could only get hold of it. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1887 •

We regret very much to report the death of a member of the Class of 1887, Harry Ernest Smith, 86, who died at his home, 260 Church Street, White Plains, N.Y., on March 14. He was born in Neponsit, Ill., and in 1888 he went to Milwaukee, Wis., as a chemical engineer for the Chicago, Milwaukee, and St. Paul Railroad. In 1900 he married the former Grace Johnson, who survives him. From 1902 to 1916 he was with the Lake Shore, Michigan, and Southern Railroad in Cleveland, Ohio, and from 1916 to 1932 in New York City he was with the New York Central as materials testing engineer. He retired in 1932 and became a chairman of the testing committee for the American Society for Testing Materials. He was also a member of the American Chemical Society. — *Class Notes Editor*

• 1890 •

With reference to the appeal in the April Review for material bearing on the college life of George Hale, Mrs. Helen Smith, his biographer, writes that she has already received some reminiscences that will be useful. She adds that her book on *Palomar — The World's Largest Telescope* has just been published by Macmillan and that it may be of interest, as it is, of course, largely the story of the last of Dr. Hale's great contributions to science. One of our classmates writes re Hale: "It is noteworthy that he had become deeply interested in the subject of refraction before entering Technology. He brought with him a fine concave diffraction grating which . . . must have been valued at several thousand dollars and was certainly an unusual piece of apparatus for a freshman to have." Our classmate adds: "A word about Professor Cross . . . may be of interest. He was a rigid disciplinarian and woe betide the student who made any disturbance while he was writing formulas on the blackboard. 'Charlie,' as we derisively called him, would whirl and silence the offender with a look or a few biting words. While not a research physicist, Professor Cross was a master of his subject. His lectures were clear and well organized. He was a first-class demonstrator and the experimental illustrations were always brilliantly performed." Another classmate recalls a lecture at which "Professor Cross fired us out (about 100) for laughing at a handkerchief hanging out of his coattail pocket, looking like a shirt not tucked in."

We are all glad to extend congratulations and best wishes to William P. Flint and Edith Pitt Chace who were married at St. Petersburg, Fla., February 28, where he has continued his winter residence at 3726 First Avenue, North, for many years. Bertram Lenfest, who has made many trips from Brooklyn to the Pacific Coast by rail and bus, now writes that after a trip to Lincoln, Neb., by plane, he is converted to air travel and is planning trips to California and to the Gaspé Peninsula.

Notice is received of the death of Albert Frederick Brown of Malden, Mass., on February 3, and of George L. Nelson of 82 Ivy Street, Brookline, Mass. (with no date). Brown, who put in three years at M.I.T. and then got his degree from Harvard, has told us at our reunions about his work designing stations for the first Boston subway, and especially the incline on Boylston Street. One of his particular problems was to make it impossible for a passenger to make a round trip without paying another fare. In 1918 he took up insurance inspection which he followed for 23 years until he retired. He was with us at our 55th and earlier reunions, but was unable to get to our 60th because of a heart ailment and arthritis. — GEORGE A. PACKARD, *Secretary*, 53 State Street, Boston 9, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle Street, Belmont 78, Mass.

• 1891 •

M.I.T.'91, with a class age of 65 years and a minimum individual age of 83 years, has at last arrived at a condition in which activities have become rather routine and of comparatively little news interest. However, some of our members have been so active in worth-while projects that it becomes interesting news when they drop or reduce their responsibilities. Gorham Dana has just furnished us some of that kind of news by declining re-election as chairman of the Brookline Planning Board on which he has served for 29 years (22 years as chairman). He plans to retire in 1955, the end of his present term. The Brookline *Citizen*, a local paper, pays Gorham the following tribute and gives a brief of his activities in civic affairs: "Before his election to the board, Mr. Dana was an active member of the former Brookline Civic Association and he cooperated with the late Mrs. Horace Howe in suggesting to the Planning Board in 1921 that studies be made for a zoning law which has just been authorized by the State Legislature. This resulted in passage in 1922 of the first Zoning Law in Brookline. Mr. Dana was also instrumental at that time in getting amendments to the Building Law, banning dangerously inflammable shingle roofs and three-story frame apartment houses. In 1921 he was appointed chairman of a special committee to revise the Building Code, and the new law was unanimously adopted by the Town Meeting in 1923. During his term on the Planning Board the following important actions have been taken: single family house zone adopted, real estate signs restricted as to size, long-range planning reports inaugurated, State Law giving the Planning Board the duties of Board of Survey accepted, parking spaces required for new multi-family houses and later for all new business buildings of a certain size, yearly reports on school population and vacant stores made, numerous suggestions made for off-street parking, a detailed report with plan for widening Boylston Street was made by the Planning Board and Engineering Department. This was submitted to the Massachusetts Department of Public Works because the thoroughfare is now a State road but practically no action has been taken by the State."

We have just learned of the death of Alexander W. Moseley on February 28, 1952. His last address was North Shore Hotel, Evanston, Ill. We have no further information. — FRANK W. HOWARD, *Secretary*, Bemis Associates, Inc., Post Office Box 147, Watertown, Mass. (telephone Watertown 4-5910).

• 1892 •

Again the Secretary has the sad duty of reporting the passing of a classmate. Arthur W. Dean died at the Winchester Hospital on March 20 after a long illness. He was with us in Course XI, Sanitary Engineering, and soon after graduation entered the field of highway engineering. He served as chief engineer of state highways in New Hampshire and afterwards as chief engineer of state highways in Massachusetts, becoming a member of the Massachusetts State Highway Department, later the Massachusetts Department of Public Works. He was also a member of the Massachusetts State Planning Board. He was an honorary member and past president of the Boston Society of Civil Engineers, a member of the New England Road Builders Association, an honorary member of the Massachusetts Highway Association, and past president of the American Roadbuilders Association. He was a member of the American Society of Civil Engineers and served for a time on the Board of Directors. He was a past president of the Calumet Club of Winchester and served on the Winchester

Planning Board for 35 years. He was an honorary member of the William Parkman Lodge of Masons and member of St. George Commandery, Knights Templar, of Nashua, N.H.

Dean was born in Taunton, Mass., March 27, 1870, and received his education in the Taunton High School, entering M.I.T. in 1888. In 1894, he married Mabel Hamblett of Nashua, N.H., who died several years ago. He is survived by two daughters, Mrs. Harry M. Squire, Jr., and Mrs Philip H. Bartlett of Winchester; and two sisters, Gertrude Dean and Mary F. Dean of Taunton, Mass. The Secretary is indebted to the Boston *Traveler* and the Winchester *Star* for the foregoing account of his career.

Before these notes are published, the members of the Class will receive from the Secretary a notice of a simple program in recognition of our 60th anniversary, which we hope will be attended by as many as may be able. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1893 •

Jacob Winn Brown, who entered the Institute with our Class, passed away in Dalton, Mass., on March 3. He was born in Woburn on October 20, 1871. Following a severe illness, which interrupted his studies at Technology, he transferred to Brown University. In business, for many years he was associated with the Silver Burdett Publishing Company in Boston and New York. During World War I he was a member of the First Motor Corps, Massachusetts State Guard, and was on active duty during the Boston Police strike.

He is survived by one daughter, Mrs. Barbara B. Stevens of Dalton, and four grandchildren.

George Lounsbury Walker, who was born in New York City on February 8, 1871, died in the Southside Hospital, Bay Shore, Long Island, N.Y., on January 27. Having graduated from the College of the City of New York in 1890, he entered the Institute and graduated with our Class from the Course in Civil Engineering. For several years he was employed as chief engineer of buildings and sanitary inspection in New York City. Subsequently, he became interested in real estate and organized two engineering and construction firms, the George L. Walker Company and the Uttoxeter Company, both of which he headed until his retirement in 1932. From 1924 until 1946 he was mayor of Brightwaters, Long Island, N.Y. During World War I he served as captain in the Construction Division, Quartermaster Corps, U.S.A. He was a member of the Society of Military Engineers; Army and Navy Club of America; City College Club; New York Athletic Club and Kane Lodge No. 454, A.F. and A.M.; the Military Order of Foreign Wars; and the American Legion. He is survived by his wife, the former Estelle Burnham, whom he married in 1905; two sons, George B., '30, and John L.,'32; a daughter, Mrs. Margaret W. Aves; and a sister, Mrs. Donald Born. — FREDERIC H. KEYES, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 38 Chauncy Street, Boston 11, Mass.

• 1894 •

A letter written to the editor of the Warren, Ohio, *Tribune Chronicle* of February 4, 1952, has recently come to the Secretary's attention. The author of this letter was our John W. Kittredge, 239 Porter Street, N.E., of that city. In this letter, John makes a strong appeal for government protection, presumably through the patent office, for inventors of processes which may have a large potential value to the country, especially as it seems to be well established that engineering, which is the fruit of invention, is essential to the continuity and success of the free world. After quoting from such eminent men as Colonel T. A. Weyher'37 of the Frankford Arsenal, Dr. A. S. Flemming, chairman of the Manpower Policy Committee, and Charles E. Wilson, all of whom recognize the importance of new inventions and their development, Kittredge deprecates the fact that the inventor, even if he has patented his invention, has little or no protection from the government. He says: "When he has developed his invention mechanically and commercially, anybody, anywhere, at any time, can start making and marketing his same invention, without paying or even a thank-you to him. Public officials sit with arms folded and do nothing. The patentee can, indeed, bring civil suits, at an expense beyond the means of an ordinary citizen, and with infinitesimal chances of securing his 'exclusive right.' I have long contended that a patent should have as high standing in law as a pig. Our government prosecutes the man who takes his neighbor's pig, but lets him take his neighbor's invention, openly, in broad daylight. Our government makes no pretense of defending a patent. . . . Our government in emergency can make and use any invention patented or unpatented, in peace or war. I contend that an inventor is entitled to protection to as much of his invention as the government doesn't want. Do we want engineers and inventors badly enough to give them the same protection we give to plows and pigs? If engineers fail [and] the free world fails, it will be because engineers and inventors are practically devoid of legal protection." At 83, John is still working on a design for a new dust engine, and is still hoping and ready to give his own part of the invention to M.I.T., if it can be made useful and is acceptable.

The Secretary and his wife have recently returned from a six-week trip which embraced a few days in New Orleans, an extended stay in Santa Monica, Calif., and a few days in the San Francisco-Berkeley area. The visit to New Orleans was primarily in relation to some problems in refrigeration research which the foundation of that name has under consideration. It gave the opportunity, however, for the Secretary to establish contact with several of his former students — John L. Porter'00, John H. O'Neill'10, Robert B. Watson'27, and Frank W. Macdonald'37, to all of whom he is very indebted for courtesies and entertainment. Only an *old* teacher can appreciate what such personal loyalty means. Reaching Los Angeles a day before the great M.I.T. meeting there made it possible for the travelers to be among those present to share with pride the fine program put on by the men from M.I.T., and to observe the deep appreciation expressed by the 200 or more local M.I.T. men who made this great meeting possible and successful. From the standpoint of '94, it was most interesting when, at the large luncheon, William L. Woollett, a distinguished architect and also an author, was called upon to rise for "a hand" as the oldest Alumnus present. The Secretary lost no time in making contact with Woollett, whom he had not seen since student days back in 1894. A lapse of 58 years makes changes in personal appearance, and the attractive, young, dark-haired man we knew then is now somewhat grayed, somewhat less plump, but just as attractive and serious, and is working at his profession and writing with a fine philosophy of life and a real sense of beauty. It was a matter of regret that a second meeting was not possible. Woollett is the devoted attendant of his wife, who for some time has been an invalid with severe arthritis; but he finds it possible to spend one or two days each week at his office at West Fourth Street in downtown Los Angeles.

As in former visits, headquarters for three weeks was at the hospitable Santa Monica home of Dr. and Mrs. P. K. Bates (M.I.T. '24 and Wellesley '23, respectively) where more than filial consideration was bestowed on the old folks from back east. The stay in southern California also gave opportunity for a brief but most enjoyable visit with Mrs. Stanley McCormick'04 at her lovely home in Santa Barbara, and to spend a couple of days at the Price Ranch (beloved by Raymond in his later years) where Mrs. Price was, as usual, a perfect hostess. The high spots of the visit to the Bay Area were meetings with Jack and Sybil Nowell and with Austin and Elsie Sperry, at their respective homes. It has now become a sort of rite for Sperry to take Nowell and Prescott to lunch at the Bohemian Club, and the hours spent there on this occasion were indeed pleasant ones of reminiscence regarding the old days. The friendships developed in those days have strengthened rather than weakened in the decades since the Gay Nineties. The Secretary can report that both Jack and Austin seem to be doing all right as they approach the octogenarian stage.

The one blot on the perfection of the stay in the Bay Area came on the day before the Secretary and his wife left for home. Mrs. Prescott had invited Mrs. Sperry for luncheon, and afterward, as they were leaving, Mrs. Sperry stepped ahead to open her car door and either slipped or turned her ankle and fell against the curb, breaking her hip. After some delay, she was taken to the hospital; the break was later reported as not of the most serious type. But the accident was a distressing one. She courageously and cheerily called up the next morning to say good-by and good trip home.

Every '94 man remembers Tom Richards, one-time President of the Class and Captain of Company B back in 1890. Five minutes before these words were written, the Secretary was talking with him by telephone. Tom is well, and says he no longer drives a car but still plays golf. In

winter he lives with his daughter and her husband, Dr. J. Baty, on Marsh Street in Belmont, Mass., and in summer at Duxbury. He is not "gainfully employed," as the tax returns call having a job, and enjoys his retirement, finding plenty of odd jobs about home, summer golf, and so on, to keep him interested. It was a great pleasure to have even a few minutes conversation with him, and a promise to come to M.I.T. and have lunch certainly is something to anticipate. — SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

• 1895 •

Colonel Percival M. Churchill, I, of Elmwood, Mass., passed away at a Brockton hospital on February 13. Churchill operated as a civil engineer in many fields during his lifetime. After leaving Technology, he was employed by the Massachusetts Highway Commission, later becoming junior engineer for the U. S. War Department — on river and harbor and fortification work. In 1901 he joined the U. S. Geological Survey as resident hydrographer on work in New York state, later becoming an engineer in the U. S. Reclamation Service. He did similar work in Puerto Rico, and, prior to the first World War, was assistant engineer in the U. S. War Department, working on various investigations and project revisions.

He always was very interested in military work, and was a member of Troop A, First Battalion Cavalry, M.V.M., during the Spanish War, but was never called into active service. He served seven years in the Massachusetts National Guard. In 1902 he won his first commission, being made a first lieutenant in the First Coast Artillery of Connecticut. In 1905 he accepted a captaincy in the U. S. Volunteers at Fort Logan, Colo., this organization being the forerunner of the organized reserve. When World War I erupted, he was commissioned a captain and ordered to Fort Niagara, N.Y., where he rose to the rank of major, training and equipping troops and building the railroad to camp. Sent overseas in 1918, he commanded the stevedore troops of the Transportation Corps at Marseilles and at St. Nazaire. After the War, he entered the Reserve Officers' Corps and in 1924 was given the rank of lieutenant-colonel, in recognition of meritorious service.

Having reached retirement age, in 1937 he was transferred to the inactive reserves, and in 1948 was commissioned colonel, Honorary Army. He was active on the State Committee on Public Safety and was a member of the Old Bridgewater Historical Society, the Society of Military Engineers, Military Order of the World Wars, and the Reserve Officers' Association. He is survived by his wife, a daughter, a son, Lieutenant-Colonel Percival N. Churchill, and four grandchildren. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Returning from Chattanooga on February 27, your Secretary stopped off in New York to attend the annual dinner given by the '96 men to the Class Secretaries. Fred Damon was unable to attend because of his arthritis. However, he is on the mend and hopes to go fishing with me at Moosehead Lake this early spring. At the New York Yacht Club, Bakenhus was host to John Tilley, Charles Trout, and Bradley Stoughton. What we lacked in numbers, we made up in the spirit of understanding which mature, trained minds can formulate into the bond of friendship which means so much to all of us. This midwinter meeting was a happy reminder of other days, and I wish we might plan for an encore before another 12 months roll around. I was able to exchange the good will from our local Boston group and acknowledge a sympathetic cord of like proportions from the New York faithfuls. We can report that Dan Bates and his charming wife are making slow but steady progress toward recovery, following their serious accident. The local contingent has passed through the epidemic without casualties and we are emerging in good order and making plans for the spring, which is just around the corner. Our benevolent fund now stands at $1,750, with no withdrawals.

We report with sorrow the passing of Edgar H. Barker. Among his special interests at M.I.T. was his devotion to music. He was one of the four of our '96 quartet (second tenor). Conrad Young and Edgar Barker cannot be replaced. This leaves Walter Stearns and Marshall Leighton to carry on. The following notice of Barker's death indicates the thoroughness with which he dominated the woolen industry in his community: "Edgar H. Barker, professor emeritus of Lowell Textile Institute, and, until his retirement in 1941, head of the woolen department at that college, died Thursday night after a brief illness in his 81st year. He made his home at 9 Mt. Hope Street. He was born in Horton, York county, England, the son of the late John and Martha (Craven) Barker and came to this country during his early teens. He lived in Lawrence, prior to establishing his residence in Lowell, and during the early part of his career had been associated with several textile firms in the downriver city.

"Professor Barker was a graduate of . . . Technology with the class of 1896. Widely known throughout the textile industry, he was an expert in the field of wool manufacturing and enjoyed an enviable reputation throughout the industry as a consulting engineer. He had been a member of the LTI faculty for nearly half a century. A 32nd degree Mason, Professor Barker was a member of both the York and Scottish Rite bodies having been affiliated with Phoenician lodge, A.F. & A.M., of Lawrence, Mt. Sinai Royal Arch chapter Lawrence council, R. & S. M., Pilgrim Commandery No. 9, Knights Templar of Lowell, Lowell Lodge of Perfection, Lowell council Princes of Jerusalem, Mt. Calvary chapter of Rose Croix and the Massachusetts Consistory. He also held membership in the American Society for Testing Materials and the Association of Wool Manufacturers. At the time of his death Professor Barker was a member of the directorate board of the Troy Blanket Mills, Troy, N.H."

Do not forget to send in any news you may have of class interest. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge, Mass. FREDERICK W. DAMON, *Assistant Secretary*, 275 Broadway, Arlington, Mass.

• 1897 •

When Charlie Eames, our classmate who was president of the Lowell Textile Institute for many years, died on January 29, 1949, a provision of his will read as follows: "The rest, residue and remainder of my estate, both real and personal, I give as follows: one half to the Massachusetts Institute of Technology." The estate has now been settled, and the bequest to the Institute amounts to $53,142.48. As one of the Institute's officials states: "This is a splendid benefaction which will aid M.I.T. in the years ahead to be of improved service to the nation for education of its youth." It also sets a splendid example that other '97 men might follow to a greater or lesser extent. Ninety-seven may well take pride in Charlie's action. He was always very loyal to his class connections and never failed to attend the reunions. When this issue of The Review appears, you may have already received notices of the observance of our 55th anniversary. It looks now as if it would consist simply of a noonday luncheon and an afternoon of social intercourse at some club in Boston on the Tuesday following Alumni Day. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

• 1898 •

Inasmuch as the Assistant Secretary left on March 9 for a month's trip in the Southland, we will continue for another month the chronicle of the doings of '98.

There is first our distinguished honorary member, Dean George R. Harrison, who was master of ceremonies at the annual midwinter meeting of the Alumni held in Walker Memorial on January 31. Dean Harrison introduced the speakers of the "M.I.T. Revelations of 1952," as he jocosely termed the three lectures (reported on page 254, March issue of The Review), with characteristic humor and illumination. Other members of the Class present were Elliott Barker, with a friend W. A. Wallace, Mrs. Pliny B. Morrill and her son T. C. Morrill'31, Ernest Russ and his son, J. Rodman Russ, and the Secretary. We were especially pleased to meet Mrs. Morrill's (Eva Crane's) son and the son of our former Class President, Ernest Russ.

We are indebted to Lester Gardner for the following concerning Charlie Winslow: "Our distinguished classmate, Charles Winslow, has written a notable report for the World Health Organization titled 'The Cost of Sickness and the Price Of Health.' He is consultant in public health of the W.H.O., professor emeritus of public health, Yale University, and recognized as one of the outstanding authorities in public health in the world. The report, in addition to being of natural interest to members of the Class in the writings of our old 'Lounger,' will be very interesting general reading, as it deals with subjects of pressing importance — the cost of sickness, its economic effects, interrelationships of poverty and disease with a program for their amelioration. Copies may be purchased for $1.50 through International Documents Service, 2960 Broadway, New York 27, N.Y."

Our world-traveling classmate, George Cottle, took time from his business activities during January to drive to Hebron Academy, Maine, to deliver an illustrated lecture on "Travels in the Far East." The write-up in *The Hebronian,* published by the students of Hebron Academy, explained at length the pictures and the comments, with which members of '98 are pleasantly familiar. At the annual Washington's Birthday ceremony of Freedoms Foundation at Valley Forge, Pa., our distinguished classmate Roger W. Babson was awarded an honor medal. The citation reads, "Roger W. Babson, editor-in-chief, Publishers Financial Bureau, for editorial, 'Honest Socialists Discover Doctrines Fail to Work Out.'"

And last but not least, our distinguished classmate, Lester D. Gardner, *e pluribus unum,* in an epoch-making ceremony, was presented with the first silver stein at the Silver Stein Dinner of the M.I.T. Club of New York, held in the Starlight Room of the Waldorf-Astoria on February 15, 1952. Lester received 60 telegrams and letters of congratulation and one poem. He has been kind enough on our request to allow us to include in these notes two telegrams which we read in New York and considered especially comprehensive. Donald W. Douglas'14, manufacturer of famous aircraft, telegraphed: "Heartiest congratulations on high honor bestowed on you by M.I.T. Club of New York in its Silver Stein Award. For many years you have been making outstanding contributions not only to the club, the Institute of the Aeronautical Sciences, but also to the development of aviation all over the world. As founder of the Institute of Aeronautical Sciences and enthusiastic leader you have been a source of inspiration and guiding light to younger men for many eventful years. The Class of '98 can well be proud of its 'Beaver' and benefactor." J. C. Hunsaker'12, former Head of the Aeronautical Engineering Course at M.I.T., telegraphed: "May the Silver Stein Award always remind you that your friends are proud to be your friends. The proudest are those who have most often responded to your initiative in advancing Technology and its goals." After the dinner and ceremonies, George Cottle, Dan Edgerly, Major Wade, Lester, and the Secretary adjourned to the University Club and spent another pleasant hour. Lester was very happy.

Arthur Blanchard writes from the Lake Shore Plantation Inn, Lake Wales. Fla., that he is enjoying his new winter home. He visited Roger Babson's estates in Mountain Park, described in the May '51 issue of The Review, and, commenting on the Chapin Gardens, remarked: "It certainly is a wonderful place." Roger told him that one of LeRoy Peavey's sons lives in an igloo up near the North Pole and radios out weather reports daily. A son-in-law of Peavey's, named Spangenberg, is the Babson stock expert. Roger will talk at one of the hotel meetings on the subject, "Great Changes Ahead."

Members of the Class continue to show their interest in '98 and M.I.T., financially-wise. As of February 29, 1952, the total of gifts credited to '98 by the Alumni Fund for this year has reached $2,665, which you can readily figure out is $433 more than the total reported as of the first part of January. One gift of $333 is of special interest. It came from an M.I.T. Alumnus who is president of a company in this region. He sent to the Alumni Fund a check for $1,000, to be divided three ways and credited respectively to his class and to two other M.I.T. classes, members of which were in his organization. One of these classes was '98 and so this generous third was credited to our classmate and to the '98 contribution to the Alumni Fund for this year.

One of our classmates has contributed $500 toward the fleet of new dinghies which is greatly needed as the old fleet is pretty well worn out. Another classmate is contributing the entire cost of a new dinghy, which will be called *The '98.* The Endowment Fund of M.I.T. appeals to still another classmate. He writes: "I had named the Institute in my will for a small bequest; but it might be better if I made the gift while living and I prefer that my small gift go to the Endowment Fund of the Institute to produce a little income to help keep running all those magnificent buildings and projects. Hence, I made a gift of stock to the Endowment Fund, which had a market value of $2,415.63 on May 17, 1950. And another gift of stock on May 2, 1951, which had a market value of $2,575.00. Mr. Snyder was instructed that credit for my gifts was to go to the Class of '98."

We have learned of the passing of John D. Underwood at La Jolla, California, on January 21. The last news item we received from this cheery friend was a postal greeting on the occasion of our last '98 get-together signed, "A lazy and happy bum."

Our active President, D. W. Edgerly, is planning a trip in Europe for the coming summer. As advised in the '98 notes of the March Review, George Cottle and friends, including the Secretary, also expect to be in Europe this coming summer. Perhaps we may meet. Who knows but that Dan and George and the Secretary may hold a '98 class meeting on one of the peaks of the Pyrenees or perhaps the Alps! Whether you receive any minutes from such a meeting or not, do not forget to send Elliott Barker items for the '98 notes. But you say: "We are not distinguished members of the Class and anything we could send would be trivial." Don't you believe it for a minute! Every member of '98 is distinguished to other members of the Class. Remember the thrill you experienced when you read in the notes about that classmate who, 50-odd years ago, had his drawing board next to yours, or worked at the next chem lab bench, or who recited in the same section with you? Well, he would have the same thrill hearing from you. You can hardly write anything that will be trivial. Some years ago we criticized an editorial friend that his personal notes were trivial. He replied; "What seems trivial to you will be important to someone else. You cannot write anything so trivial — to you — but that it will greatly interest somebody." So take up the pen or pencil, limber up the old wrist, and write to Elliott. Make his heart glad with a flood of items for the news. — EDWARD S. CHAPIN, *Secretary,* 463 Commercial Street, Boston 13, Mass. ELLIOTT R. BARKER, 20 Lombard Road, Arlington, Mass.

• 1899 •

In March, 1932, the Lindbergh kidnapping case startled the nation. Twenty years later, practically on the anniversary of that date, it comes to light that a classmate was an important witness at the trial of Hauptmann, who was convicted and subsequently executed. The witness in question was Charles A. Schmitt, now living in Reading, Mass. His professional history discloses some other exceedingly interesting facts. On graduating from M.I.T., Charles went to work for the Carter Ink Company of Boston. He was their chief chemist for 35 years and also acted as their consultant in court cases. On retiring, he opened an office at 55 State Street, Boston, Mass., as an ink examiner of questioned documents. His work includes chemical and microscopic analysis of ink writings for expert testimony in court. All kinds of scientific equipment are required for this work and his decision, even to a figure or a letter in a word, is very important. Both Charles and his associate, Robert P. Phipps, a qualified document examiner, are members of the American Society of Questioned Document Examiners, whose motto is "Justice through Science."

In some of the many cases in which he has been a witness, the amounts involved ran from $39,000 up to $17,000,000, and covered such items as a changed will, an extortion letter, a raised sight draft, the restoration of chemically erased writings, a forged signature, a false note and confirmatory letter, Bible entries in the Lotta Crabtree case, and records in books and in the Bible in the famous Garrett case.

Percy Witherell has recently been a hospital case. Finding it impossible to answer all his "get well" cards and messages, he made a pen and ink sketch depicting himself in a hospital bed with a doctor examining him with a stethoscope and three good-looking nurses in the room, one taking his pulse, one bringing medicines, and a third brandishing a hypodermic. While we haven't the evidence, it would seem that with such attention his stay would likely be unduly prolonged. Charles Barnard Page is the head of C. B. Page and Associates, combustion engineers, located at 800 West North Avenue, Chicago, Ill. In a letter from Dan Patch'02 to our Assistant Secretary, Charles says he is still in circulation and his only physical disability is that he get writer's cramp as soon as he starts writing with a pen. Well, according to the experiences of your Secretary, Charles, you are not the only member of the Class with this handicap. I hope some of them get over it enough to write to me. Charles was manager of the Technology Musical Club when Dan joined the group during the freshman year.

Volume II of *Public Health Engineering* has recently come from the press. The author is Earle B. Phelps, V. Volume I, which has been on the bookshelves quite a number of years, was recently revised by Earle. These volumes are indispensable to anyone in the public health field.

A clipping from the Boston *Herald* for March 10, forwarded by Gardner Barry of Sandwich, Mass., contains the sad news of the death of Haven Sawyer at his home in Bangor, Maine, where he has lived since he retired. He was among those who attended the 50th reunion of the Class in 1949. Haven served for many years as consulting engineer on many timberland projects in Utah, Nevada, Idaho, and California. In the twenties he was chairman of a committee that pioneered in keeping the highways of Maine open in winter. His survivors are a wife, a daughter, and two sons.

A letter from George Priest shows that he is in Oklawaha (sounds like a Chinese laugh) in Florida. He states he is building a house for himself down there, "working from 7:00 A.M. to bedtime. For a retired man of leisure, the busiest loafer you ever saw." He spends the best part of the year on a cattle ranch owned by a friend of his and goes to Maine for the fishing season. For the present his house in Brattleboro, Vt., is leased. George sends his regards to the '99 boys. A letter from Lewis W. Riddle sounds very much as he used to in the old undergraduate days. Lewis is retired and lives at Harbor Springs, Mich., when he isn't traveling. He sounds as though he were enjoying life. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

• 1900 •

Class reunion at The Pines, Cotuit, Mass., June 10–12. Don't forget!

Members of our Class will be most pleased to learn that, through the Development Program, a memorial fund was created for Dick Wastcoat. This fund was the gift of Paragon Gear Works, Inc., of which Dick was the president and treasurer for many years, and from his wife, Betty C. Wastcoat, and his daughters, Virginia (Breymeier), Carolyn (Bullock), and Richalie (Wyatt). Through this fund, Dick, in the years ahead, will always be able to help M.I.T. — which meant so much to him and was so prominent in all of his thoughts. According to the Treasurer's Report, this fund amounts to $4,500, the income to be used by the Institute only for general purposes.

We are very happy to report that George Russell is now quite well again and will soon be in circulation. He has had a long, hard siege and we rejoice in his recovery. To make the record complete, the Secretary is obliged to report that he himself has just had a brief period of hospitalization but is now out again and quite recovered. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

At the time of writing (March), I have received 27 replies to the class letter. I hope that many more of you will send yours in before it gets buried on your desk.

Willard Dow says that he has not retired and is the second oldest squash player in the Union Boat Club of Boston. He proudly informs me that he has just beaten the oldest player 4 to 1. Frederic Ayers reports from Detroit: "I am still with the Truscon Steel Company where I have been since 1905, engineering and sales work. Our headquarters and plant are located in Youngstown, Ohio, but we have a large warehouse and office force in Detroit. We are the leading manufacturers of steel building products in the United States. The only other 1901 man located in Michigan is Tony Campau, an architect in Grand Rapids. He has designed many outstanding buildings in the state and was too busy to come to the 50th reunion." Lammot du Pont has retired but is still a director of the Du Pont Company and a member of one of its important committees. Edward Beckwith of Garrison, N.Y., has retired but sends no other news. Angus MacInnes from Port Washington, N.Y., in answer to the query as to what he was doing, says: "Retired in 1946. Maintenance of home property and gardening during the summer. Woodworking, rugmaking, and other hobbies during the winter." From Fred Sexton in Wolfville, Nova Scotia: "Following same old routine as established upon retirement five years ago. Fully recovered from joyful experiences of reunion at Oyster Harbors. Hoping you are the same. It makes me happy to know you also have sought out rural life for its quiet satisfactions."

Arthur Hayden of St. Michaels, Md., sends an interesting account of his doings. I wish that some of the rest of you would follow his example. Arthur says: "I thought I had retired. So I did from professional work, but find myself serving time at hard labor — repairing an old house and improving nine acres of neglected grounds. Thought I could get help by hiring a husky laborer occasionally, but — 'Oh Boss, I cain't do that kind of work; what you need is a bulldozer.' So I did the work myself. No one tempts me now to punch him in the nose. I read the news by the Secretary avidly but have nothing to add. Don't think that I have an 'estate' or even a 'place' down here. Nine acres is only a shovelful around here but I am not ambitious enough to own an estate of a thousand acres. Nine is enough for me."

Al Higgins, as we know, has retired but is doing consulting work and designing knockdown casual furniture. Bill Farnham reports: "Retired since March 1, 1937; actually I was merely subject to call only after November 30, 1936. Stay each summer at Portsmouth, N.H., 'Wentworth-by-the-Sea' and go each winter to the 'Carolina' at Pinehurst, N.C." Here at Jaffrey in New Hampshire we have had snow on the ground since early December. Since the first of February we have had several heavy snowstorms and have had altogether between four and five feet. At present there is between one and two feet on the level and it is the middle of March. We look hopefully for spring. — THEODORE H. TAFT, *Secretary*, East Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1902 •

When these notes are read, the reunion will be "just around the corner" and all preparations made for the big roundup. Dan Patch has kept you up to date on everything and you can be sure that all will have a rousing good time at Coonamessett. It is interesting to note that Rodeo, or "throwing the bull," seems to be the popular choice in sports. And we all will be strong contestants for the prize! Whether Hunter will insist on at least ducking in the ocean remains to be seen; he is unpredictable in the love of his dip. Who will be with him? Not I, for one. I'll take a tramp with Baldwin and Patch. Grant Taylor claims to be the champion at croquet, but Luke Collier thinks differently. Let them try it out. Robbie has been carefully guarding the class funds away down in Maine, far from Brinks, but will bring the moneybags with him to the reunion and — Mrs. Harris.

I have just received a letter from James Driscoll and, while he will be at Coonamessett to speak for himself, I give it to you now: "For 50 years I have followed the profession of chemistry for which I prepared at M.I.T., Course V. After leaving in June, 1902, I took a position as manager of the Rubber Department of the S. S. White Dental Manufacturing Company at Staten Island, N.Y., where I had a most unusual opportunity of learning the rubber manufacturing business. After five years, to broaden my experience I took positions with the following companies: Davidson Rubber Company, Charlestown, Mass., as technical superintendent for two years; Thermoid Rubber Company, Trenton, N.J., six years as chief chemist, later as superintendent; Fisk Rubber Company, Chicopee Falls, Mass., as assistant to the superintendent for three years; Hodgman Rubber Company, Tuckahoe, N.Y., as chief chemist, later superintendent seven years; and after two years with the Dixon Crucible Company of Jersey City as consultant on eraser rubber, joined the Johns-Manville Corporation at Manville, N.Y." Driscoll remained with that firm for 25 years as chief chemist and research engineer in charge of manufacturing development until his retirement at 66. Since then, as he puts it, to keep out of mischief he has spent two years with the General Cable Corporation in Bayonne, N.J., in synthetic rubber research. Thereafter, he has spent the major part of his time in development of 40 acres of woodland in the White Mountains of New Hampshire, returning in the late fall to hibernate in Plainfield, N.J. — BURTON G. PHILBRICK, *Secretary*, 246 Stuart Street, Boston 16, Mass.

• 1903 •

Through the kindness of Dan Patch'02, we have received the following information about George Obear, who died about eight years ago: "George B. Obear was born in Lynn, Mass., July 27, 1879, and entered M.I.T. with the Class of 1902. He took his degree in Course VI with 1903. He took his master's degree at Brown in 1905 and his Ph.D. in 1911. He was an instructor in mathematics and electrical engineering at the Lowell Textile School, 1903–1904, assistant instructor in mathematics at Brown, 1905–1907, in the physics department at Colby College, 1911–1916, at Case, 1916–1918. He was captain and head of the Department of Physics and Engineering at the Medical Research Laboratory Air Service, 1918–

1920, and head of the Department of Physics at the University of the Philippine Islands at Manila, 1925–1934. He was agricultural economist, Agricultural Adjustment Administration, U.S. Department of Agriculture, Manila, Philippine Islands, 1934–1944. He died in the Santo Tomas Internment Camp during the autumn of 1944. He was a member of the National Research Council, P.I., the Association of the Teachers of Physics, and the Philippine Islands Scientific Society. His research work had covered the following: standard cells, nucleation and ionization, hygrometry of gelatinous media, electric conditions in animal tissue, oxygen in aviation, and dermatography. He worked with D. G. W. Crile of Cleveland on the problem of shock, and in the first World War was stationed at Mitchell Field, working on the training of aviators and supplying equipment needed. He worked on the pressure chamber there and on problems related to it, such as the supply of oxygen to aviators. He wrote papers on this subject, now on file in Washington. While at Colby, he married Emily Hanson, one of his students, and they had one son, George, who served in the Army and was in Manila in the spring after his father died. He got his B.S. in civil engineering at the University of Maine in 1947. George, Sr., was much loved by his students in Manila, among whom was Colonel Romulo. He had become very interested in Masonry and was head of the Far Eastern Commandery." Although somewhat late, we thought the above would be of interest to those who knew him at the Institute.

Tom Sears has been elected to the board of directors of the Norfolk County Trust Company in Braintree, Mass., and in the brief notice which appeared in the Quincy *Patriot Ledger* is the further information that Tom has been on the board of water commissioners for more than 25 years, and its chairman for the past several years. A letter from Hewitt Crosby is as follows: "For the third time, a small but enthusiastic contingent of 1903 gathered for luncheon in Florida. The time was February 21, and the place was Bahia Mar Yacht Club in Fort Lauderdale. Present were Reed, Regestein, Sears, Lounsbury, and Crosby. We had greetings from Chadbourne, Chase, and Morse, who were too far away to attend. As usual, we had a grand time swapping yarns and exchanging news of classmates. Lots of photographs were taken. All of the five look well and happy and, although retired (except Sears), are living active lives and also useful ones. Frank Cox could not be with us this year because he had made previous arrangements to be entertaining a grandson who was visiting town briefly. We saw him at his attractive winter home in Cocoanut Grove a few days before the luncheon. He is well and active. Mrs. Cox and Frank are well known to bird lovers because of their flock of painted buntings for which they provide food and shelter. These somewhat rare birds are the most beautiful in Florida."

Fred Eustis and his wife left by plane for French Morocco on February 26, and are to be gone two months, traveling in Spain and Portugal. – Keep June and the reunion in mind; more information will come to you later. – FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

A few days after our last batch of class notes was sent to the Review office, a clipping was received from Gus Bouscaren regarding his former roommate, and our classmate, R. E. Lee Taylor of Baltimore. It is unfortunate that illustrations cannot be published in the class notes, for the clipping shows Lee cavorting on the ice with a charming lady on his arm. It seems that Cap Curtis is not the only '04 man who retains his athletic prowess after 70. Another letter has come from Gus just as these notes are being prepared, from which we quote as follows: "In the number of The Review just received, you leave yourself wide open to a plea from me as the class agent of the Alumni Fund. The letter which went out in November, a copy of which is enclosed, brought in wonderful replies from Paul Paine of Los Angeles, Jasper Crane of Wilmington, Cal Bascom of St. Louis, and other classmates – men I had been out of touch with since graduation but who were good enough to say they remembered me and enclosed generous checks. Out of the original class of 500, only 250 of us are left. We oldtimers need one another's company and support. In your next newsletter please make a special appeal to those members of the Class who have been thinking that $5 or $10 is a proper measure of the advantages the Institute has brought them. Letters addressed to me at 646 Prospect Avenue, Winnetka, Ill., will give me a great lift and will be most cordially answered."

Henry Kramer made his appearance in Boston recently to purchase seeds and other supplies for his place in Duxbury, Mass. He reports that he is really enjoying his retirement in the country and is developing the green thumb of the successful gardener. Dwight Fellows finally got back from his western tour but almost immediately took off for Florida to rest up. He apparently has the right idea about retirement.

Boston papers noted the marriage, in Hollywood, of Diane King, daughter of Dr. and Mrs. Herbert T. Kalmus, to Terry Mullin. The following quotation from the Boston *Herald* indicates that Herb must have thrown quite a party: "All the glamor of a technicolor movie surrounded the couple at the reception held at the home of the bride's parents. The house and gardens were filled with yellow daffodils and green tents decorated with clusters of yellow balloons sheltered the guests at dinner. . . . Yale Gracey was best man and there were six ushers. The bride was graduated this month from the University of Southern California and the bridegroom is a graduate of Stanford University. Easterners at their wedding included the Marcus Munsills (Sally Badger) of New York and Osterville, Mr. and Mrs. William Baker, Jr. of New York and Centerville and the Charles Grovers of Boston."

A belated report of the death of one of our classmates has come to us via the Alumni Office. Augustus C. Foster, Course VI, passed away December 31, 1950. No further particulars are available. – EUGENE H. RUSSELL, JR., 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, Room 8-109, M.I.T., Cambridge 39, Mass.

• 1905 •

At the midwinter gathering of Alumni at Walker Memorial on January 31, the following were present: Fisher, McLean, Buff, Balkam, Atwood, Damon, and Shapira. I was unable to be there because of an impending wedding on the following day. The word impending is used advisedly; if you have had three daughters married within 21 months, you will understand the meaning. However, our daughter, Ruth Olive (our baby), was married to Daniel B. Maynard of New Ipswich, N.H. "Four down and one to go." Both Ruth and Dan will graduate from the University of New Hampshire in June of this year, where the husband of our Carol, married last September, also will graduate at the same time.

Charlie Smart, II, whose election to the chairmanship of the Board of W. and L. E. Gurley was announced in January, apparently has time on his hands. He is also associated with the American Tool and Machine Company of Hyde Park, Mass., as director, and labor relations consultant with the firm of Rautenstrauch and Villers of New York City. Charlie has apparently been reading books on retiring gradually. 1905 men are helping to build up the monthly luncheon meetings of the Boston Luncheon Club, perhaps in moral support of Sam Shapira, who is treasurer, and myself as secretary. Regularly seen are McLean, Buff, Helpern, Shapira, Files, Eichler, Fisher, Gammons, Damon, and Donald. Donald, by the way, is at present very efficiently aiding in an executive way the present Red Cross campaign in Boston. Shapira announced in December the birth of another grandson. Norman, proud father and member of the Class of 1941, is a captain in the U.S. Army and is stationed in South Carolina.

Recently I made an attempt to shame some of our unwilling correspondent classmates into furnishing news items for this column, and to give suggestions as to procedure in connection with the 50-year program and class gift. Results to date have been disappointing. Andy Fisher, who is the best assistant secretary I have, and who probably does more traveling and contacting than I, suggests that, in connection with this program, we do something about establishing a wintertime old men's home in Florida, surrounded by pecan trees, orange groves, and so on. Considering the climate as these notes are written, I can agree with him. Dan Harrington, X, writes from Wilmington, Del., that he is enjoying life as a retired individual and finds plenty of things to keep him busy. And this from Joe Daniels, III: "It is now 4:30 P.M.; in a half hour I shall be leaving for home after a fairly quiet day at the office. Some days I am on the jump from eight to five; today was different. And so goes the life of a schoolman in a busy institution like the University of Washington. A calm, prosaic life is not the

usual state of affairs, particularly in the mining field. In a week we shall conclude our 'winter' quarter and have a brief interlude for inspection trips. The classes are going into eastern British Columbia to look at one of the famous mines of the Consolidated Mining and Smelting Company; another group will be visiting the trail smelts of the same organization. I shall not go but hope to have a little letup, possibly play for a few days at a summer camp we have on an island not far from Seattle. There isn't much to tell you of interest. I've had a rotten spell of flu (as a matter of fact have had two) and the bugs have left me rather lazy and tired. Just as soon as the weather is milder, I'll get outdoors around the house and play at gardening. My wife does the planting; she's a professional gardener. I do the heavy chores: weeding, spraying, cutting grass, and so on. We have a nice, simple, modern house and have just enough space around it to keep me occupied. My two oldest daughters are married; they have five children betwixt them, which makes me a quintuplet grandpa. One daughter has just finished school, is working in a radio studio in Seattle, and lives at home with us. You ask about the 50th reunion. Well, I have no specific suggestions. It's such a far cry now from Seattle to New England, and 1955 is three years away. What my decision will be, if any, in the spring of 1955 is difficult to say, but I certainly would be happy to go to Boston and see old classmates and friends. Roy H. Allen surprised us by coming through Seattle last fall; we were delighted to see him and his wife on the very brief stop he made here before heading south for California. I still have three years to go before compulsory retirement and I hope I can continue my university association until then. I have enjoyed my work and associations here, and except for an urge to travel, have no desire to move anywhere else."

Waldso Turner, VI, sends in a check for dues and with a post card, which should have been mailed nine months ago, stating that he is leaving his winter home, Vero Beach, Fla., on June 1, 1951, and will arrive at our 46th reunion at Osterville on time. He must still be on the road as he hasn't arrived at Osterville yet, but a mutual friend just told me he saw him in Vero Beach early in March (1952). Thanks for keeping us up to date "K.C."

In spite of the reluctance expressed in the last writing, notices of the deaths of our classmates do come in. Harry S. Foland, VI, died at North Plainfield, N.J., on June 9, 1950. This Secretary has had no contacts with Harry and no further details are as yet obtainable. Harold P. Hart, VI, died at his home in Framingham, Mass., on February 10, 1952. He did not graduate with us, but one of his first jobs was with the Western Electric Company in New York City, followed by a term with General Electric at their Harrison, N.J., Lamp Works; later he went into the munitions field. The previously mentioned Fisher dug into back issues of the Providence *Journal* and came up with the following: "Elliot Lum, 68, of 4343 Post Road Cowesett, who retired 3 years ago, as manager of the Graybar Electric Co. of Providence died suddenly at his home yesterday [December 8]. Dr. Fenwick G. Taggart a Kent county medical-examiner attributed death to a heart attack. He was born in Aberdeen, So. Dakota, a son of Charles and Anna Lum. He attended U.M.I. and graduated from M.I.T. in 1905. He was an electrical engineer and had been associated with Graybar Electric Co. 35 years. A resident of Cowesett section of Warwick for 20 years he was active in organizations in neighboring East Greenwich where he belonged to the Lions Club, Greenwich Club & Varnum Continentals. He was a member of Covert Lodge "No. 1 F." & A.M. of Omaha, Nebraska, Omaha Chapter R.A.S.M. and several engineering societies. Survivors are his wife Mrs. Rose (Patterson) Lum, and a sister Mrs. I. H. Overman of Minneapolis."

Answering our expression of sympathy on the death of Jim Fouhy, I have a letter of thanks from his wife, Helen, and a detailed statement of his physical difficulties during the past five years. Apparently Jim fought the good fight painfully, but uncomplainingly. — Fred W. Goldthwait, *Secretary*, 274 Franklin Street, Boston, Mass. Sidney T. Strickland, *Assistant Secretary*, 69 Newbury Street, Boston 16, Mass.

• 1906 •

As recorded in the last paragraph of the class notes in the April Review, the Secretary and his wife started on a motor trip to Florida on February 14, and arrived home March 15 after having driven about 3,500 miles. We went down the East Coast, spent 10 days in Miami, and returned via Sarasota, St. Petersburg, Winter Park, and St. Augustine. In Sarasota we spent a pleasant evening with Abe and Mrs. Sherman at their beach house on Longboat Key. The Shermans have been wintering in Florida since 1945. They now reside in Rochester, N.Y., moving there last year from Fitchburg, Mass., where Abe was born and spent his business career with the Dillon Steam Boiler Works. They have a married daughter living in Rochester. On Tuesday, March 4, we arrived at Winter Park and dined with Ralph and Christine Patch. After dinner we visited them in their attractive winter home and next morning Ralph took us on a personally conducted sight-seeing tour of the community, including Rollins College, beautiful homes, gardens, and so on. Before leaving he gave us the experience of picking oranges from the trees in his yard. The Patches have been going to Winter Park since 1946. We were very impressed with the appearance and atmosphere of Winter Park, as it seemed to have a quiet refinement far more relaxing than busy cities such as Miami and St. Petersburg.

Frank Benham advises that his trip to the South consumed five weeks. He spent two weeks in Miami, leaving that city the day before the Secretary arrived. The remainder of the time was consumed in leisurely touring, including stops at Williamsburgh. On the return trip, his older boy, Frank, Jr., and his family spent several days with his father at Williamsburgh.

In further reference to Florida: On arriving home, the Secretary's mail included a post card from Claude S. McGinnis announcing a new address of 1409 Pine Street, Clearwater, Fla. His card also included this note: "Will be there by April 2. Sorry not to get to the last reunion. Am retiring from my chairmanship of the Physics Department of Temple University. I note that the M.I.T. Physics Department says our Temple students have been tops in preparation for graduate work at M.I.T." Those who attended the 1946 reunion will recall Claude's presence with us at that time.

The following notice from the New York *Herald-Tribune* of February 9 reported the death of William E. H. Mathison of our Class: "William E. H. Mathison, investment counsel, whose offices were at 522 Fifth Ave., died yesterday at Mother Cabrini Memorial Hospital, 611 Edgecombe Ave. He lived at 545 W. 148th St. A graduate of Wesleyan University in Middletown, Conn. and . . . Technology, Mr. Mathison was a member of Delta Kappa Epsilon Fraternity. Surviving is his wife, Mrs. Marguerite Milbank Mathison." Mathison had never been active in class affairs, probably accounted for by the fact that he was a Wesleyan graduate and, like many of the A.B. men of other colleges, his interests were with his alma mater. — James W. Kidder, *Secretary*, 215 Crosby Street, Arlington 74, Mass. Edward B. Rowe, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, Mass.

• 1907 •

Unfortunately, the only fact that I have to record for this issue of The Review regarding any of our classmates is the death on January 3 of Rutherfurd Bingham. I learned of this through a note from his wife on February 21, and, in a somewhat later letter which she wrote to me as the result of my having sent a note of sympathy to her, she stated that her husband was stricken with coronary thrombosis on Christmas Eve, and was rushed to Massachusetts General Hospital, Boston, where he died 10 days later. Bingham entered the Institute as a member of the Class of 1906, but during his junior year his father died and he left school, to return to receive his degree in 1907. He was associated with the Department of Electrical Engineering. After graduation he worked with various concerns in electrical engineering, until in February, 1911, he entered the United States Diplomatic Service, and from then until 1920 he was employed in this way in Ecuador, Austria, Denmark, Cuba, and in Washington, D.C. He resigned from the Diplomatic Service in 1920, and his ability to speak Spanish plus his experience in the Diplomatic Service enabled him to get a job with Standard Oil of Bolivia and also with Standard Oil of Venezuela as a sort of contact man between the company and governmental authorities in Bolivia and Venezuela in seeking concessions where his company might operate. Later he acted in charge of the company organizations, including not only business and engineering organizations, but also the medical department, commissary, and so on. For four years he spent most of his time living in a wild country in the Andes and on the plains in South America to the east of these mountains. In 1924 he inherited a farm in

Pennsylvania, and, as both he and his wife had plenty of money, he retired from active business life. His first wife died in June of 1931, and his only son, Lieutenant Rutherfurd Glenn Bingham, United States Army Air Force, was killed in World War II. He married again in May of 1941. He lived a very quiet life after his retirement in 1924. The only time that I ever saw him was on February 6, 1941, when I spent an hour with him at Hotel Charlesgate in Boston where he was then living. At the time of his death he was living at Dartmouth House, 271 Dartmouth Street, Boston, and if any of you should care to write to his widow, she can undoubtedly be reached at that address.

At the time that you are reading these notes, only a few weeks will remain before June 20, when our 45-year reunion will begin at Oyster Harbors Club at Osterville, Mass. You have undoubtedly received an announcement from me regarding this anticipated event, and I hope that you will promptly return to me the attached coupon stating that you are planning to be with us. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1909 •

We have received the following from George Wallis, II: "I think at one time I told you that it was my plan one of these days to relinquish some of the heavy duties here at Chicago and I am glad to tell you that at the meeting of our Board of Directors following our annual meeting yesterday, I was elected chairman of the board and chief executive officer. We are establishing our residence at Wenham, Mass., and have just finished restoring an Eighteenth-Century home which has been in Mrs. Wallis' family for the last 75 years. While I will make monthly trips to Chicago, I will have a lot of time left to do more of the things which we thoroughly enjoy, including traveling, fishing, and golf. I am extending a very cordial invitation to you and Mrs. Dawes and any of our other classmates to drop in and see us whenever you happen to be in Wenham. It will not be hard to find us. Just ask anybody for the location of the colonial residence with the red door on Main Street."

Below is an excerpt from a letter which George sent to the organization: "At the meeting of the Board of Directors of the Creamery Package Mfg. Company, Chicago, Illinois, following the annual meeting of stockholders on February 27, G. E. Wallis was elected Chairman of the Board of Directors and chief executive officer. Mr. Wallis joined the C.P. organization in 1916 and served as President and General Manager since 1933." George goes on to say: "I have thoroughly enjoyed my close association with the C.P. organization during the 22 years at the General Office. I now feel that it is only fair that Mrs. Wallis and I should spend more of our time with the family in the East where we have established our residence." George has, in part, ended a most successful career and we all wish him and Marcia every happiness. Note the cordial invitation to all of us to visit them at their colonial home in Wenham.

We have received notices of three deaths. John M. Hatton, IV, died on January 30 in New York. Our records show that he was also connected with '08, that he was a captain in World War I, and since 1916 has lived in New York. Reference to him is made in the class notes for November, 1946, when Paul happened to look over the May number of *Architectural Forum* and the name John Matthews Hatton caught his eye. He had designed a watchcase factory on Long Island and the layout was so good that it had been written up at length in the *Forum*. One of the striking details of the plan was an arrangement that was sure to cut down losses on the precious metals in dust and sweeping. H. Usher Miller, III, died on November 3. Our records show that he was also connected with '10 and that his address since graduation has been St. John, New Brunswick, where he was connected with a lumber manufacturing company. The notice of the death of Thomas B. Black, III, came rather belatedly, since he died February 18, 1951. He came from Sioux City, Iowa, and prepared for the Institute at Mercersburg Academy. He was a member of the Mining Engineering Society, Iowa Club, and was on the tug-of-war team in both his freshman and sophomore years. After graduation he was employed by the Vulture Mines Company at Wickenburg, Ariz., but later returned to Sioux City. He was a first lieutenant in the 338th Field Artillery, American Expeditionary Force. In 1926 he took up his residence in Chicago where he remained until 1936. He then moved to Columbus, Ohio, the last address in our records.

When this number of The Review comes to you, it will be just about one month before Alumni Day, Monday, June 9. Plan to be at the Institute that day. In the morning the various buildings and laboratories will be open for inspection and there is the important alumni luncheon in the Great Court where so many of us meet one another. In the evening there will be the Alumni Banquet at the Statler, at which the '09 table is always well filled. Be sure to make plans to attend both events as this is about the only good opportunity which we now have for a reunion, and be sure to bring your good helpmate. — CHESTER L. DAWES, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 366 Madison Avenue, New York 17, N.Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

It is with deep regret that I have to announce the death of Harold R. Wilbur. Edward Howe advised me of the loss of our classmate as follows: "Harold R. Wilbur, 64, transmission engineer for the Metropolitan Edison Company, died last night in the Reading Hospital. He last worked on January 24 and was admitted to the hospital the following day. Wilbur, a resident of this area for 12½ years, resided at 1604 Bern Street. He was with the company and its affiliates for more than 30 years. He spent almost his entire youth in Kingston, Mass., and graduated from the Kingston High School in 1904. At M.I.T. he was a member of his freshman tug-of-war team. During his junior year he was commanding officer of the Technology Battalion. He and I performed our thesis together. It was a plant test of the electric power plant in Plymouth, Mass. His home life has been a very happy one. His outstanding characteristics were living an intensely useful and Christian life, devotion to duty as he saw it with utter disregard for his own well-being, and an unusual thoroughness in everything he attempted. As an example of his thoroughness, he made his own cartridges for use in marksmanship matches he attended. There is no doubt that his constant driving himself for utmost accomplishment brought on his death. The immediate cause of his passing was determined by post-mortem autopsy to be staphylococcus pneumonia. He died February 12, 1952. The outpouring of sincere sympathy for the family and the heartfelt expressions of respect typified Harold's own noble character."

Francis Silsbee, who is with the National Bureau of Standards, writes as follows: "Am still bossing the electricity division at the National Bureau of Standards. Sort of an overgrown example of the precepts we learned from Professor Frankie Laws in T.E.N. in Lowell Building. Vital statistics include one son teaching physics at University of California, Berkeley, after a year's traveling fellowship at Oxford. Younger son married and chasing a Ph.D. in physics (as I did) at Harvard. A daughter (and two granddaughters) 'helping' her husband chase a Ph.D. in geology at the University of Louisiana. If any of the Course VI gang have forgotten how big an *ohm* or a volt is let 'em drop in on me at the N.B.S. and I will try to show 'em."

Henry Hale has just returned from a trip to the Caribbean. His letter to me, while brief, makes me feel I would like to take a similar trip: "If anyone can get a week's respite from the daily grind, I can heartily recommend a trip by plane to Puerto Rico and the Virgin Islands. It's only six and one-half hours from New York to San Juan and 30 minutes from San Juan to St. Thomas. The scenery, hotels, and especially the climate were tops when I was there last month. For a bit of indoor relaxation they serve you coconut milk mixed with a 'native preservative' in a hollowed-out coconut — a rather nice milk diet!"

Occasionally I meet Carl Lovejoy who is engineer for the New England Division of the U.S. Corps of Engineers. Carl is now living in Brookline, having recently sold his home in Rhode Island. Dud Clapp and his wife have just returned from a trip to Williamsburg, Va. Immediately upon his return he called me, as he was well aware of my interest in colonial restoration. Curtis Hilliard has been appointed supervisor of health in the Town of Needham, Mass. The following is from the Needham *Times*: "Mr. Hilliard is professor of biology and public health at Simmons College and has served the Wellesley health board as its part time supervisor since 1929. He holds a similar position in Weston. A graduate of Dartmouth College, Mr. Hilliard did graduate work at M.I.T. and has written several textbooks in the field of bacteriology and disease

control. He is president of the Massachusetts Central Health Council, Massachusetts director-at-large of the National Tuberculosis Association and a consultant for the field training service of the State Department of Public Health." — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

• 1911 •

Well, mates, 1911 now has an honorary member: Thomas C. (Tom) Desmond'09, life member of the M.I.T. Corporation and former Alumni Association president. Here is how it all came to be, as written by Class President Don Stevens in a late February letter to ye sec.: "The activities of the Class of 1911, from the 40th reunion up to date, were so successful that we had indeed an anticlimax at the mid-February Silver-Stein Dinner of the M.I.T. Club of New York on the Starlight Roof of the Waldorf Astoria. Lois and I were shocked to find that the only other members of the Class present were the loyal Campbells — Jim, I, and Antoinette. We were pleased, however, to sit with State Senator Thomas C. Desmond'09. He has always been such a good friend of 1911. Also the Bill Lucey('07) family. We made a quiet but congenial party. Jim thought we ought to send you an autographed menu [which was enclosed]. And because Tom had always taken such an interest in the Class of 1911, I suggested that Jim and I, as a majority group of the Class, at least for the evening, should elect Tom a permanent honorary member, all of which you will find duly inscribed on the menu. Tom was delighted."

Forthwith I wrote Tom, welcoming him to honorary membership in the Class of 1911, saying: "It is really a thrill to learn from Don Stevens — our beloved class president — that he and Jim Campbell named you as the first honorary member of our illustrious Class during the mid-February Silver-Stein Dinner at the Waldorf. This ties you and me — always close — even closer." Writing from his office in the state senate, Albany, N.Y., where he is chairman of the Committee on Affairs of Cities, Tom completed matters thus: "It was characteristically thoughtful of you to write me as you did on February 23. Of course I was very much pleased to be named the first honorary member of the Class of 1911 and shall endeavor to live up to this honor." Tom and his authoress wife, Alice, live in nearby Newburgh, N.Y.

Did you see our illustrious classmate Bun Wilson pictured on the cover of *Business Week* for February 9th in front of a background of aluminum gadgets, with the subcaption: "Alcoa's I. W. Wilson: 'I can see no threat to the aluminum industry . . .' "? If you missed it, get hold of a copy pronto and read the story on page 80, entitled, "Alcoa Is Rarin' to Go after Civilian Markets." The interesting article predicts that when United States aluminum expansion is rounded out next year, capacity will be twice as much as in 1950; for from pre-Korea capacity of 1.45 billion pounds, it will have risen to 2.9 billion pounds, or almost twice as much as the industry ever sold in a year without the stimulus of a big arms build-up. But some folks seem to be hanging crepe, the article states, because "besides our own expansion, they see a danger in Canada's growth to 1.25-billion lb. capacity — especially when most of Canada's production is less expensive than ours."

"However," it continues, "no one seems happier over the United States expansion than I. W. Wilson (cover), president of the Aluminum Company of America. 'I can see no threat to the aluminum industry in the capacity additions as planned,' says Wilson. 'In fact, in a free market with a normally good world economy, we're more likely to need new capacity than we are to find ourselves with excess plant.' " The article then goes on to describe the product-by-product survey of the field that Alcoa is carrying on, with the biggest single market the electrical industry, followed by the building industry, the automobile industry, other segments of transportation, and refrigeration and air-conditioning fields. Automobile makers, it states, are testing a furnace-bronzed aluminum engine, which can be cast in "slices" (horizontal cross-sections) by the less expensive permanent mold process — four slices for a block, four for a cylinder head (pictures, pages 80, 81). "If car makers buy the idea of the aluminum engine," it continues, "Alcoa and the other producers could count on selling maybe 45 lb. of every V-8 cylinder head, maybe 70 lb. of each V-8 block and every year the economic balance tips more toward the brazed aluminum engine."

In conclusion, the article states: "President Wilson of Alcoa isn't greatly concerned about Canadian competition or, for that matter, by anything except how soon the free market will return. He has been around the aluminum business too long to get jittery. Wilson joined Alcoa in 1911, fresh out of M.I.T. In nine years, with time out for World War I, he rose to the post of assistant to the vice-president in charge of reduction plants. In another 10 years, at the age of 40, he was a vice-president. That was better than par for the course in a company whose first employee, Arthur V. Davis, is still active as chairman of the board. When Wilson joined Alcoa, he figured he'd missed the boat somehow, since the company had just finished an expansion program. He's long since made up whatever he lost. In World War II he directed Alcoa's $300-million expansion concurrently with a $450-million federal aluminum plant program. He's spending $330-million now on more new plants and there's no surety that he won't direct still another Alcoa expansion in that time of free markets he's looking forward to. Having seen all that, Wilson doesn't shy at bogeymen. Neither does he blink at the broad new horizons opening up. At the same time, Wilson and his sages have learned not to count chickens in the shell. In Pittsburgh they're still chuckling at the salesman who, years back, toiled to find just the proper alloy for timepiece hands. Finally, the customer hailed the latest sample as exactly right. No order, though — customer said the samples would last him for 10 years."

Our hearts go out to Walter Welch, VI, in the death of his charming wife, Grace. She had seemed in such fine health when she accompanied Walter to our "fabulous fortieth" at Snow Inn, Harwichport, last June that news of her passing came as a distinct surprise when I received a card from Walter, who was getting a "much-needed rest" in late February at Fort Myers, Fla. He is office manager of Combustion Engineering Superheater, Inc., 200 Madison Avenue, New York 16, N.Y.

More and more classmates are availing themselves of the opportunity of securing one of the fine Gardner-built (S. Bent and Sons) M.I.T. chairs — one of the latest being the insurance tycoon, Ken Faunce, VI, who wanted one sent to his summer place at Owl's Head, Maine. These must be ordered directly from the M.I.T. Alumni Office, by the way. — Although Joe Harrington, VI, lives at 155 Canton Avenue, New Rochelle, N.Y., and his business is Enjay Company, 15 West 51st Street, New York 19, N.Y., he requests that we use Post Office Box 419, Larchmont, N.Y., for mail. Sounds a bit confusing, but it's correct, says Joe.

Remember there is still time to make your contribution to the 1951–1952 Alumni Fund. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

It is with deep regret that we note the death of Oliver C. Lombard, VI, who passed away February 10 in Short Falls, N.H. Oliver went to Short Falls in 1919, purchasing the general store there. He was postmaster for 20 years and town treasurer from 1924 to 1927. He took an active interest in town affairs and was past grand master of Evergreen Lodge, I.O.O.F., past master of Jewell Lodge, A.F. & A.M., and past patron of Bethany Chapter, O.E.S., of Suncook. He also found time to act as deputy chief of the Epsom Fire Department for about 10 years. His wife, Helen, survives him, as well as four children: Dr. Everett F. Lombard of Concord, Stephen J. Lombard of Short Falls, Mrs. Nancy L. Peters of Hopkinton, and Janet Lombard of Short Falls.

Further information regarding Tom Lawler, whose death was noted last month, has just come to hand. Tom passed away with a heart attack very suddenly. Since 1919 he had been with International Bank, a private merchants banking institution, of which he was secretary and treasurer. Tom was also connected with the I. B. Corporation and vice-president of Interstate Properties, Inc. He is survived by two daughters and a brother.

A note from Hal Richmond, Class of 1914, has just advised me that while he was in Rio de Janeiro on a southern trip, he learned that the wife of Phil Redfern had died. Phil is president of the Byers Machine Company, Ravenna, Ohio.

Bill Glidden writes from Richmond expressing surprise that I was able to report in the class notes his excursion to Somerville last summer. Your Class Secretary has eyes and ears that are always in search of news. Bill is engineer of bridges for the State of Virginia, Department of Highways, and was up here for the first confer-

ence on prestressed concrete held at the Institute. While there he met Malcolm Priest and Charlie Jones, who made a good threesome. Malcolm is reported to have changed very little, still tall and handsome. Charlie is reported to be increasingly jovial and correspondingly rotund. Bill claimed that he is still recognizable, but he had better come up to the Cape in June to let us check on it. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. LESTER M. WHITE, *Assistant Secretary*, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1913 •

I had the good luck to find Henry Dew, III, in his office at Jacksonville, early in January. He has changed, of course, and looks the part of a man of affairs, which he is. Henry, a Virginian who has preserved his native graciousness, is vice-president of Saint Joe Paper Company, with mills at St. Joe, Fla., on the Gulf near Tallahassee. His office is in Jacksonville. The Kraft liner board business is far removed from mining, which course he completed at Tech in two years, following two years at Washington and Lee University. Incidentally, he is class secretary there and very active in raising money to keep that fine institution free of government domination. In 1911 Henry decided that he wanted to be a civil engineer, and went to M.I.T. with that in mind. Somehow he got talking with Charlie Locke'96, who told him that the chances for quicker and more material rewards were in mining. After graduation, Henry did a stretch in copper mining in Montana before going into the service in World War I. Upon his return from the Army, he found mining in Montana copper in a low state. The only alternative for a mining job was in South America, which he declined, and took a job with National Carbon Company, with headquarters in New York, and a sales territory covering the whole eastern half of the United States. He met his choice for Mrs. Dew in Houston, Texas, then began to look for a job where he would live at home and raise a family. He got the job in Jacksonville 22 years ago, and has lived happily ever since. He has three girls and a boy. The oldest girl is enrolled at Wellesley, and is spending this year as an exchange student at the University of Edinburgh, Scotland. The boy is presently in the Army. Henry is very high on Florida for outdoor sports, fishing, hunting, and year-round golf. To get back to business, the paper mill is owned by the Estate of Alfred I. du Pont, and has been granted a certificate of necessity in the amount of 24 million dollars for enlargement. Raw material comes from company-owned 800,000 acres of slash-pine forest lands. Forestation, if that's what you call it, on this scale is big business in itself, having to do with reforestation of lands previously denuded by saw mills, fire protection, towers and crews, trucks, road building and maintenance. Henry's employer has 23 banks in Florida, and he is a director of three (limited by law to the figure). Henry is concerned with large-scale affairs and the enjoyment of a rich family life.

Ken Franzheim, IV: "You make us all feel very old talking about a 40th class reunion. Needless to say, I hope to be there in spite of all my infirmities. I find already if it isn't one thing, it's two others. We are mailing you under separate cover today a copy of a book we published recently for your information." The title of Ken's book, of 51 pages, is *Drawings and Models of Some of the Recent Work of Kenneth Franzheim.* I shall certainly carry this book under my arm at our 40th reunion, because it beggars my powers of description. Pa Ready, VI: "Just a line to let you know that the class grandbaby thanks you sincerely for the plug in the class notes. There is a sequel. She is now lab assistant to the professor of biology of the Sanitary Engineering Department at Harvard, and not doing too damn bad at all (much to our amazement). Our business seems to be turning mostly U.S., and again we won't know whether we're solvent or broke until the emergency is over." Max Waterman, II: "Best regards to all on this, the last day of 1951. Were I to make any comment, it would only be, as one who has seen and is rather close to the sufferings of so many in this world, to say that we are all lucky persons to have been born Americans and to live in America, notwithstanding all we read in the papers." Marion Rice Hart, X: "It must be a Christmas hangover that makes me do this. I can't imagine anything much worse than a 40th reunion." Marion's vast knowledge of navigation is evidently worthless following a party. Otherwise she would never have said this.

Edgar Menderson, II: "Still functioning as exec secretary of Security Savings and Loan Company, which I helped organize 22 years ago. Only progress that I can report is not of my own doing — I now have five grandchildren. Had a heart attack a year ago but am tougher and ornerier than ever. Was glad it made me give up golf and all its attendant aggravations. It lets me make the wife leave early with me from all parties where I am bored." Mrs. Lee Bowman writes for her husband Lee, IV: "For some reason I can't exactly understand, Bow doesn't care to send his life's history, but I might say that he is O.K., teaching full time at Franklin Tech Institute in Boston, keeps busy at home as well. Our daughter is 19, a freshman at Ottawa University in Ottawa, Kansas. Last year I was supposed to send you $1.00 and I never did, so here is the dollar for last year as well as this. Now don't write Bow and thank him for the info. He won't like it! Explanation: We have to call him 'Bow' because our daughter's name is also 'Lee' and there is too much confusion — or rather, there was — when *neither* would answer to the name! Particularly if it were to do something for me." George Forrester, X: "As I never sign any, I won't make any. Brevity, à la Arlo — also the soul of wit, à la somebody else. Dunno if I'll make the 40th. As far as health is concerned, I should make the 140th; but I have semiretired and live too far from Cambridge — 12 miles." Bill Brewster, II, in his staccato style, with touch of brimstone: "Not very much news, I'm afraid. Family all well, and we had a wonderful Christmas present in hearing that my youngest boy, Ben, a first lieutenant in the Marines, is coming home from Korea soon, and we have since heard from him in Seattle. Glad to see him out of that place, and I wish all the rest of our boys were, too. In November we made a realignment of offices and responsibilities at Plymouth Cordage. I was elected chairman of the board to fill the vacancy caused by Mr. Loring's death; I continue as treasurer, and will devote full time to company affairs and policies."

George Dempsey, X: "Not much of interest. Am still a shoe manufacturer, even though four years ago I sold two businesses and retired. Four weeks of this was enough and I started a new manufacturing business at about the same retail level as before (men's dress shoes). Am married (late in 1940, for the first time) and have a lovely daughter Dina, aged nine." Tom Byrne, IV: "I am looking forward to our 40th reunion in June, 1953, which will be here before we know it. Just had a Christmas card from Andy Vogel from Schenectady reminding me of the reunion, which I appreciated." Phil Burt, VI: "I have nothing new to report. I am still doing the buying for Wellesley College and enjoy my work and the atmosphere." Clarence Berry, VI: "Just back from a wonderful vacation in Florida. Will try to see you at the 1953 reunion. I enjoyed our 35th very much." Art Hirst, V: "Being in the game of supplying chemicals to the textile industry, how may I make any remarks fit to write? Thank heaven I quit textiles years ago, so that I may let you mill men worry. For over 25 years I managed big finishing plants and never experienced any such a mess as they are in now." Art is telling you that the textile business is bad.

Ed Cameron, I: "Your request for class dues gets filed with the other bills, so in the bill-paying frame of mind I write this note: decidedly pessimistic. Same old grind — paycheck versus bills, and with rubber checkbook you end up with small balance. Hell no, for there's income tax coming. Assets: six grandchildren; reasonably good health so long as I behave; a good hobby which keeps me researching on historical engineering projects; an occasional story thereon in M.I.T. Review or elsewhere; a lecture now and then on the subject; good daughters; good sons-in-law; net capital — see *small* above; a million good friends. Lots of folks seem to like me. Liabilities: six grandchildren; mean disposition at times; the usual bad habits; my inability to acquire the fine frame of mind of the Class Secretary of 1886. Be sure and read what he says in the January, 1952, class notes. Gosh Fred, reading the above I seem to be doing all right. Added to my usual job, I am editor of the Jackson and Moreland house organ, called the *J & M News Digest;* and as we are two weeks behind with our January issue, I guess I should have put that with the liabilities. They say, 'When is it coming out, Ed,' and I just say, 'Yes.' I forgot another rather valuable asset: my historical library, which has books on the construction and engineering status of things at various periods of American history. Many years and many dollars have gone into the collection of these books and my

plan is to leave it to someone who will appreciate it. I think it is unique; at least, I have seen nothing like it elsewhere. Maybe the M.I.T. library will get it, if they want it." Ralph Thomas, VI: "Sorry to be so tardy, but I haven't much to contribute. My only contacts with '13 men recently have been with Clarence Berry, who, as you know, is a fellow employee. Am still vice-president and executive engineer of the Consolidated Gas Electric Light and Power Company of Baltimore, but haven't much active service time left. Will be 65 this year, and we have a compulsory retirement plan based on age 65. However, the exact time of my retirement as an officer is still uncertain. We are having a hectic time keeping up with our loads, obtaining materials and equipment, and so on. Civil Defense is also taking some of my time, as I am a member of the Maryland Advisory Council for Civil Defense and a staff member of the city C.D. organization."

Harold Hopkins, IV: "Since selling the farm in 1949 near Sacramento to the University of California, things have slowed down a bit for me but it seems just as hard as ever to get the chores done. In order to keep up between interests at Sacramento and Los Angeles, I have flown my own *Beechcraft Bonanza* since 1946. The weather has been wonderfully bad and have been on the ground for the last six weeks. We go to New Zealand fishing in February. This is our third consecutive trip. Last year I caught a black marlin weighing 604 pounds." John Woodward, II, President, has been made a director of the Newport News Shipbuilding and Dry Dock Company. If you missed reading Al Townsend's, II, article about Lowell Institute in the December, 1951, Review, as I missed pointing it out at the time, do look it up. Al does an excellent job of speechmaking and he is equally proficient in written expression. Few people realize the importance of the educational niche filled by this utterly unique school, endowed a hundred years ago by John Lowell, Jr., son of Francis Cabot Lowell. Allison P. Smith, VI, died of cancer on February 12, 1952, at Stowe, Mass. Al was a homey sort of man, who enjoyed his work as a carpenter. He had a soft spot in his heart for his class association and wrote about it with feeling. He left his wife, six sons, and nine grandchildren. — Frederick D. Murdock, *Secretary*, Box 788, Pawtucket, R.I.

• 1914 •

Back into harness again after a very fine trip to South America and just in time to make it unnecessary for Ross Dickson to pinch-hit again. Many thanks, Ross, for taking on during my absence. All Fourteeners know that Ross lives in Elizabeth, N.J., where three airplanes crashed within two months, killing well over 100 persons. Much too close for comfort for Ross.

Frank Somerby has been on a tour again, this time in behalf of the Secondary Education Board of which he is recording secretary. Frank spoke at several schools in California and at an important West Coast educational conference. Normally he spends his time in New York where he is a master at the Buckley School. Your Secretary had lunch and a fine visit with Skip Dawson when he came down to Boston for the March directors' meeting of the Associated Industries of Massachusetts, of which association he is vice-president. Skip, incidentally, won that election last December and is now also a director of the National Association of Manufacturers. Between times, he is treasurer of E. D. Jones and Sons Company of Pittsfield, manufacturers of paper mill machinery. At the 106th annual meeting of the State Mutual Life Assurance Company, whose headquarters are in Worcester, Mass., Arthur W. Johnson, who had been secretary of the company, was promoted to vice-president and secretary. Congratulations, Art.

From Alden Crankshaw, we regretfully learn of the death, on February 27, of our classmate John H. MacKinnon of Larchmont, N. Y. MacKinnon was a graduate in Architecture and was president of Gest and MacKinnon, engineering contractors at 120 Broadway, N.Y. Mac came to the Institute from Seattle, transferring from the University of Washington at the end of his first year there. During undergraduate days he was a member of the track team. Mac is survived by his wife, a son, and a daughter.

Charlie Fiske had a meeting on March 13 at the University Club with Paul Owen and Ross Dickson to discuss reunion plans. They agreed that Pine Orchard, both because of its location and facilities offered, was a very satisfactory reunion spot. This is where we held our 35th. Accordingly, it was agreed between them to explore the possibilities of getting a reservation there in mid-June of 1954. When we find out what the situation is, we will then see that the information appears in these notes. Incidentally, Charlie Fiske had only recently returned from his business trip in Mexico. In spite of its being a business trip, he did have the pleasure of doing some fishing and of getting a sailfish. Charlie also has added to his family through the arrival on March 4 of a granddaughter, Elizabeth Bartlett Thompson. Her mother is Ann, Charlie's youngest daughter. Paul Owen also wanted to put in a claim for the number of grandchildren in his family. He has three grandsons and three granddaughters. Two of these grandchildren arrived last year. Can anyone beat this record of six? — H. B. Richmond, *Secretary*, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. Ross H. Dickson, *Assistant Secretary*, 126 Morristown Road, Elizabeth, N.J.

• 1915 •

Send in your Alumni Fund contribution and help Max! Our good old 1915 quota is pretty low so let's push it up there where it belongs for the glory of this Class.

In Saco, Maine, recently I talked to Alfred Hall, who is resting comfortably at home and still active in class and M.I.T. affairs, and who sends his best regards to all Fifteeners. With his check for class dues, Dave Hughes wrote from the Coast: "You are handling so much money that I think the Class should employ someone like Price-Waterhouse to make an annual audit." Well, Dave, it is a good thing we appreciate your sense of humor! The boys watch me so closely that I can't get away with a thing. Congratulations to Brick Warfield who recently was admitted to partnership in the firm of consulting engineers, Coverdale and Colpitts, 120 Wall Street, New York 5, N.Y. Sam Eisenberg sent out a clever announcement of his new office at 739 Boylston Street, Boston (phone co 7-5840). A generous host, Sam will welcome any visiting classmates who drop in to his new office.

In January, Ernie Loveland was elected vice-president in charge of production of the Seaplant Chemical Corporation, New Bedford, Mass. Ernie joined the Seaplant Products Division of the Krim-Ko Corporation as general superintendent in the fall of 1948, and continued in that capacity with the new Seaplant Chemical Corporation last fall after that corporation absorbed the Seaplant division of Krim-Ko. A major area supervisor at the atomic energy plant at Oak Ridge, Tenn., during the war, Ernie has a long record of successful plant and production management experience, including managerial connections with Carbide and Carbon Chemical Corporation, National Southern Products Corporation, S. B. Penick and Company, George LaMonte and Son, and B. T. Babbitt organization. All the best to Ernie in his new position. It is hard to figure whether these classmates of ours who take these extensive cruises have been more successful, or retired, or are just plain older and need the rest, but Abe and Haya Hamburg are away on a 38-day cruise to Buenos Aires and Rio de Janeiro. Max and Katherine Woythaler are flying all over the Caribbean, aggravating us with postal cards about the cool and refreshing rum drinks served down there!

Reliable Ben Neal was both scared and prompted by that absence of class notes recently and wrote me: "This 'no news,' coupled with your lack of any notes in the last issue of The Review has preyed on my mind for the last week or two. What is going on fellow? Are you down at the mouth, sick at heart, or physically ailing? It looks to me as if some of the boys down there at Boston have got to put on a little pep talk. A friend of mine down in Franklin sent me a page from the Woonsocket *Call* with a story of the class politician, Tom Pond: 'Franklin. In what was regarded in local political circles as a stunning upset, Thomas C. Pond, retired industrial executive, unseated Salvatore Potenza for the three-year term on the Board of Selectmen to highlight the annual town election here yesterday. Pond's margin of victory over the incumbent was a scant 36 votes.' " Thanks for those kind words, Ben, and your own contribution helps to put over this month's column. Tom is apparently joining Speed Swift and some of the other class politicians.

Remember those famous words "it is better to give . . ." and pay your class dues and help Azel. — Azel W. Mack, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

There are just a little more than three weeks now before our 36th reunion. The final arrangements have been made at

Coonamessett Ranch Inn for the week end of June 6, 7, and 8, and the plans for a cocktail party in Boston on the 9th between 4:00 and 7:00 P.M. have also been completed. The Alumni Banquet is at the Statler Hotel and gets underway about 7:00 P.M. on Monday, June 9. This is a week end that no member of this Class should miss, and we sincerely hope that no one will have to miss it.

Here's a letter from Hen Shepard: "I have forgotten when I last sent in a report of my activities. I think most of the boys know that I went back with the Stowe-Woodward Company as vice-president and manager of the Bowling Ball Department after my two and one-half year hitch with the Navy in World War II. My work there required my being away from home a great deal, which I cared for less and less after being a sales manager for 30 years. So I resigned in June, 1949, and have established myself as a manufacturers' representative here in Boston. I have three industrial accounts now, but am looking for better ones, and would like to hear from anyone who wants top-flight sales representation here in New England. My hobbies are still golf and the restoration of old automobiles. Right now I am dickering for a 1914 Stanley Steamer. Last fall I sold a canary yellow 1921 Mercer Raceabout, which I had restored to mint condition. It is lots of fun. My oldest – Henry, Jr. – graduated from Yale, Phi Beta Kappa (from his mother), and was in Cairo for two years instructing at the American University. He is now in Göttingen, Germany, working at an International Student House. My daughter, Anne, graduated from Hollins College last June, and is now working in the Connecticut General Insurance Company here in Boston. The youngest, Dudley, is in his second year at Yale in the Naval R.O.T.C. A 36th reunion next June sounds interesting, and I hope to be among those present, if it comes off."

Reverend Raymond Blakney, who is president of Olivet College, sent us this letter: "All I am doing is running a college. It's a nice campus that Olivet has, worth something over two million, but it is just a little speck in a landscape dotted with colleges and universities financed by Michigan taxpayers. So, my job is just like everybody else's, in one respect at least: It keeps me on my toes as many hours as I can stand it every week, and just because it is difficult it is interesting – a kind of human engineering, except that there are almost no problems with exact solutions as there used to be in the days when I struggled with Course I. I am grateful to you for your patience in being secretary of the Class, and I like to be among those present in your thoughts. You certainly are in mine."

Lyman Quincy writes: "There really isn't much to tell you. Things are going along about as usual at the old stand, and I guess our company is getting its share of business for the defense effort. Hunting and fishing are still excellent, but probably not quite as good as when you were down here some years ago. Personally, I have had to slow down a little, particularly along those lines, since the doctor said not to exert myself too much physically. I think the idea of a 36th reunion next June on Cape Cod would be an excellent idea. I only regret that the distance would probably make it impossible for me to attend. As you know, there is a great shortage of M.I.T. men in this neck of the woods; in fact, Sam Lapham is about the only one around here that I know of."

Here's one from Jack Heller: "Your plea for news does not fall on deaf ears but they might as well be deaf. I have been taking things pretty easy for the last year or more. Had a little pump trouble; nothing serious but just one of those very convenient things that give you a good alibi for not doing anything you don't want to do. Since I saw you, we bought a little house here in Woodside (120 Toyon) and have been living in it a year. It has no central heat but does have natural gas heaters scattered here and there and has a fine fireplace. We manage to keep warm without any difficulty. I hope that you will not let this fall into the hands of the California Thundermug of Commerce – I would be severely criticized for even intimating that we ever need heat of any sort in the Golden State. We have owned an acre lot in another part of Woodside for several years and we finally decided to try to build the usual 'dream-house' thereon. Fooled around with a high-powered architect – not an M.I.T. man – and couldn't get what I wanted at a price we could afford. Finally got mad and paid him off and lay awake nights for a couple of months. Dreams finally jelled and I sat down and drew out the floor plan. Took it to some architectural draftsmen – not M.I.T. men either – and they finally, after the usual number of changes and losses of equanimity, came up with a set of plans which please us very much. Supposed to get a figure from the contractor tomorrow and then it becomes a question of can we or can't we? Personally, I'm not at all unhappy in the little place we have. It has a nice view, over half an acre of land, and is on a secluded dead-end road. Also it represents to my mind just about as much investment as is needed to shelter two people and a dog. But you know women! Or do you? The Gasair Corporation pretty much runs itself, so, in order to keep from getting fat and flabby like some people (nothing personal, of course), I have been playing with some other ideas that have been kicking around for some years. This, in addition to the afore-mentioned architectural opus. Became a grandfather for the fourth or fifth time on Washington's Birthday. After thinking it over, I'm reasonably sure it was the fifth, although it may have been the sixth. All of them are back in your part of the world and I am frank to admit that I am undoubtedly the world's worst family man. As a matter of fact, I have always rather envied the system the dogs use, whereby Mr. Dog tips his hat, says 'It was nice knowing you, Goodby! – and that's the end of it. Regarding a summer get-together, this is entirely academic insofar as I am concerned, but it should be fine for the lads that are close enough to attend."

Here's an interesting letter from Bill Howard: "In review, I'll repeat that I dropped out of engineering back in the 30's to get my daughters into more cultured surroundings where they could attend college and still live at home if they wanted to do so. For the past 12 years I have been the business manager of the city schools here and have enjoyed living again in this beautiful valley where I was born 65 years ago next August. I have seen these three northwest states grow from a few hundred thousand to five million in population; and from a country where public land was still to be had for the taking to a state where land is almost too dear to purchase; from migrating Indian tribes still carrying bows and arrows with their guns to Indians driving Cadillacs. I am glad to have lived in the West even though I haven't become rich. I have an old friend here, Harold Crawford, Course IV, Option II, of the Class of 1913. I occasionally contact M.I.T. engineers stationed with the Army Engineers of the Plutonium Works at Hanford. Most of the latter live in what we call the Tri-City Area which includes Pasco, Kennewick, and Richland. Some live here where it is much pleasanter to live. We have one of the best spots for living in the country here at Walla Walla, in spite of the publicity in a recent issue of *Look* magazine. We were certainly indignant when that seven-year-old report was used. We had about 7,000 men at the bomber base here during the War when conditions were not too good. However, even then Walla Walla was under better control than most towns afflicted with an Army base. At present there probably isn't a cleaner town of its size anywhere. Since our daughters are no longer at home, my wife and I get away for many week-end trips. We camp out under the stars quite a bit in summer and I do considerable fishing from May to October. About five years ago at a Kiwanis gathering I met a cousin of Abdulnour, architect of 1915. He said the latter works all over Persia and especially in Lebanon and is a well-known architect there. I remember helping him on some drawing details once. I often think of M.I.T. days and have many pleasant memories of associations there. Leo Ball, whom I understand has gone, was a special companion. I was sorry to hear of his death a number of years ago."

Saul Hoffman writes: "No doubt, you know I have two sons at M.I.T. The older, Myron A. Hoffman'51, was awarded a fellowship for his master's degree which he expects to receive this June. Incidentally, his cumulative is 5.00 this past term. Not bad, eh! The younger, Allan S. Hoffman '53, is doing very well also and is on *Voo Doo*, the Student Faculty Council, and so on. I also have another whiz kid – a daughter, Marilyn Ann, six and one-half years of age. The boys are 21 and 19 years of age, respectively. Personally, I am in the textile end of the industry in sales. I am and have been active in charity work. At present I am president of the Chicago Advisory Board of the Denver Sanatorium (a nonsectarian hospital of T.B. and associated chest diseases). Last November 18th we had our 47th annual anniversary banquet at which Senator Estes Kefauver was the principal speaker. He and I got very well acquainted and call each other

by our first names. Since then I have become treasurer of the Illinois 'Kefauver for President Club.' Now you have some of my activities. Hope it will help you out."

Word from Doug Robertson tells us that he spent the month of February sojourning in Mexico. Steve Brophy spent a couple of weeks of the month of February in Mexico City and stopped off for a few days in Fort Lauderdale, Fla., before returning to the hustle-bustle of New York City. Hovey Freeman also is getting ready for a trip and writes: "My wife and I are trying to get away on a trip and whether we end up in the Caribbean, Mexico, or Yucatan all depends on what reservations we can get. It may be that we will throw the whole thing out and go to California in May."

From Ralph Spengler, in Cleveland, Ohio, comes the following: "Your letter of February 15th certainly warrants an answer, but what sort of a reply would be of interest to my classmates of '16, as there has been nothing outstanding about my work? For 27 years I have been a lone wolf in the consulting field, dealing with problems pertaining to steam power and refrigeration in the industrial field. As you know, this territory has many diversified industries and so makes my work very interesting. Lately Mr. de Fasselle (Tech graduate of '46) has come with me to take over the bulk of the work and to carry on as Ralph A. Spengler and Associates, consulting engineers. Our daughter, Margaret, is married and has a son. Her husband teaches in the University of West Virginia and so they are living in Morgantown, W.Va. Our son, Junior, who was 25, died in 1944. My wife and I are alone here in Cleveland. Your letter was appreciated. I was glad to hear from you."

Earl Edwards sent us this welcome note: "Because it was getting very difficult to obtain materials, and so on, I gave up my manufacturers' representative setup and I am now superintendent of Pumping Stations, M.D.C. Sewerage Division, under our beloved classmate Tom Berrigan. For several years Tom felt that one with my experience could be of value to him and it was only last fall that this opportunity came about. Regarding another get-together this June, I am all for it, Ralph. Having them only every five years, especially at our age, it is impossible for all the boys to get together."

The following has been received from Barnett D. Gordon: "After graduation I spent about a year and a half in Washington, D.C., working for Uncle Sam in chemical engineering research. On my return from government service at the end of 1918, I became interested in a small hosiery mill in Boston, and I am now connected with several knitting-mill enterprises. We are currently manufacturing ladies' full-fashioned hosiery in New Hampshire, Massachusetts, South Carolina, and Texas. We have established a tricot cloth knitting department at our New Hampshire mill, and last year we set up a new business to manufacture ladies' lingerie. These various enterprises play havoc with my time, but I do manage to do some reading, to carry on a limited social life, and to somehow keep up on current events. I have been appointed by the Commonwealth of Massachusetts a trustee of Lowell Textile Institute, and also a member of the Medical Approving Board, both of which offices I now hold. I am a member of the Century Club, the Boston Stein Club, the Masonic Order, and the Shrine. In 1921 I married Ruth Myers, and we are the proud parents of two sons. My sons are both graduates of Exeter Academy. Gene, the elder, got his B.S. degree from Harvard and his M.D. at Boston University Medical School. He is married and lives with his wife and two small sons in San Francisco, where he is well on his way to becoming a neuropsychiatrist. Malcolm, the younger, received his premedical training at M.I.T. and then got his M.D. degree at Boston University Medical School. In the thirties, Mrs. Gordon and I traveled extensively through Europe and the Near East. Last year we took a trip to Hawaii which we enjoyed perhaps more than any other vacation we had ever taken, and we certainly hope some day to go back for another visit. M.I.T. is very close to my heart, and some years ago I established a substantial scholarship fund at the school. This has been added to since. The income of this fund is to be used to further the education at M.I.T. of any deserving, needy student, regardless of race, creed, or color. My classmates are fortunate that I have not yet started my autobiography, otherwise this might have gone on and on."

Then there was this note from Hank Smith: "The story of my activities, since I wrote to you for The Review a year or so ago, is rather dull. I have the same job as standards engineer with Underwriters' Laboratories, Inc., in New York; my residence address is the same; and I have the same wife and daughter. I am sorry that I was unable to make the reunion in Massachusetts last year; and if the Class decides to have a 36th reunion this year, I will make a more serious effort to be there." Dick Berger wrote: "I am for an alumni get-together, and would try to make it." Here are a few excerpts from the report of the talk given by Dick at one of his recent public speaking engagements: "He proposed a congressional investigation of the American Cancer Society's policies, charging these are not in the public interest ... this organization, he said, in conjunction with the American College of Surgeons is sponsoring a program for detection of cancer after the disease has occurred and then is seeking cure ... the result of this approach has been a gruesome failure because at the present time a large proportion of cancer cases are not detected until too late ... the basic reason for the inexorable annual increase of the incidence of cancer is the failure of the American Cancer Society and the Damon Runyon Memorial Fund to inform the public regarding cancer-causing irritants so prevalent in modern living ... some of these irritants are soot, arsenic, benzol dyes and their derivatives, chromates, asbestos, roentgen rays and radioactive chemicals in the air, in food or in medicines. Arsenic spray residue in tobacco and also in foods was cited as a potent factor ... he commended the expanded protection of the public advocated recently by Dr. Heuper, Chief of the Cancerigenic Studies section of the National Institutes of Health, who proposed a provision in the Food and Drug Act requiring all new chemicals added to food and cosmetics to be previously tested for both toxic and cancer-producing substances." Stay with it, Dick.

Thanks again for your letters. We'll be looking forward to hearing from you again soon. — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N.Y.

• 1917 •

Enos Curtin, who is consultant to the director of operations of the Economic Cooperation Administration and deputy assistant administrator of operations there, has been elected to the Board of Directors of the Graham-Paige Corporation. Ed Warner is now president of the Council of the International Civil Aviation Organization. He has long been active in aviation technology and, we learn, is responsible for the wind-tunnel program of the National Advisory Committee for Aeronautics. Penn Brooks, who is now dean of the new School of Industrial Management at the Institute, has been elected a member of the Board of Trustees of the American Optical Company. Herb Bone has been named chief engineer in charge of mechanical operations of the Union Switch and Signal Division of Westinghouse Air Brake Company.

Win Swain writes: "You will be interested to know that the stereoscopic pictures which I took in New York were excellent and have been adde' to the 1917 collection. Some time ago Ray Stevens said that he would like to send the collection to 1917 groups in other communities to help refresh class recollection and to assist in building up interest in the reunion this spring. I am about ready to release them after applying the captions."

Claud Roberts writes: "On the basis of a specific request from the Far East, I have been taken out of moth balls at Frankford Arsenal and I am on the verge of departure for Japan for a two year (plus or minus) tour of duty. I am to be research and development liaison officer, technical consultant and trouble shooter, and Fuller Brush salesman in general, for all Ordnance matériel in use in the Theatre. I think it will be interesting and useful, and I am rarin' to go. The family will follow as soon as it can be arranged. My address will be: Colonel Claudius H. M. Roberts, Ordnance Corps, O-173117, Ordnance Section, G.H.Q., FECOM, APO 500, in care of Postmaster, San Francisco, Calif. In view of the above, I obviously will not be on hand to attend our 35th reunion in June. I had hoped to make this one, having missed all of the others, but no can do."

We have just learned of the death of Howard S. Thompson, Jr., in September, 1950. News has also come of the death of William B. Ross last November. — RAYMOND STEVENS, *Secretary*, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42. FREDERICK BERNARD, *Assistant Secretary*, 24 Federal Street, Boston 10, Mass.

• 1918 •

Dr. Julius Gottlieb, retired pathologist at the Central Maine General Hospital and secretary of the Central Maine Bingham Committee since 1936, died at his home in Lewiston, Maine, on February 17, following a lingering illness. He was a native of Jerusalem and came to this country in 1902. After attending Technology, he received his B.S. degree at Harvard, his M.D. at Boston University School of Medicine, and then did extensive graduate study. At the Central Maine General Hospital he organized the first school of medical technology in Maine, and also was director of the School of Medical Technology at Colby College, a faculty member of Tufts Graduate Medical School, an instructor in pathology and bacteriology at Boston University School of Medicine, a fellow of the American College of Physicians and Surgeons, and has been assistant medical attorney general for Maine. In addition to being pathologist at the local hospital, he was consulting pathologist, in his position with the Bingham Associates, for 14 other Maine hospitals from 1927 to 1948.

Dr. Gottlieb was a diplomat of the National Board of Medical Examiners and certified by the American Board of Pathology. He had been associate editor of the *Maine Medical Journal*. Poor health forced him to give up many of his activities in the medical field and in 1950 he formally resigned as head of the pathology department at the Central Maine General Hospital, a position he had held since 1927. On January 29, 1926, he married Jeanette Miller at Providence, R.I. Besides the widow, he is survived by three sons: Dr. Leonard S. Gottlieb of Boston; and Burton M., and Paul H. Gottlieb of Lewiston, Maine. — GRETCHEN A. PALMER, *Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

• 1919 •

A recent note from George C. McCarten advises that everything is going fine with him out in Cleveland, Ohio. He is going to work on our 35th reunion attendance from the Middle West.

Received a note from Joe Newell, who is with the Aeronautics Department of M.I.T., and he had this to say: "If all change be progress, the Institute certainly must be away ahead of our rivals in all fields. We old-timers get lost wandering around the original buildings looking for courses or offices where they 'always were.' Course XV is no longer in the 'Morgue' of our day; the old machine tool lab is being re-established in the new metals processing building, and other things get displaced or replaced so rapidly that you have to check office numbers in this term's telephone directory to find where a man or a laboratory probably is. In addition to that, we have new curriculums designed to get five years' education into four years' work. The students are tough enough to take that punishment, but the staff shows the strain." He also wrote that Donald C. Stockbarger, who was an associate professor of Physics at M.I.T., had passed away last February. We extend our deepest sympathy to his family. He runs into Jim Holt and Carl Svenson, who are also professors at M.I.T., and they both look quite durable and get around with a very youthful step. He believes that mechanical engineers are a more hardy race, not prone to worry about Earle Miller's exploding boilers in these days of Diesel power. He sends his very best regards to all his classmates.

Will Osgood writes that he is moving back to Washington on a year's leave-of-absence basis from the chairmanship of the Department of Mechanics, Illinois Institute of Technology, to do a job for the National Research Council's Committee on Residual Stresses, beginning March first. His address is expected to be 2929 Macomb Street, Washington 8, D.C. Not much new with me, says Jim Reis. He is still living in San Marino, Calif., and working at Northrop Aircraft. He is looking forward to making some changes when Mrs. Reis fully recovers from burns, received in an accident which has had her in the hospital for over nine months. He was hospitalized also, but only for a short time, and has fully recovered now. He also wrote that he had breakfast with Don Kitchen when he was here for the M.I.T. conference. He would certainly be glad to see any of the classmates should they be out his way. Congratulations to Timothy E. Shea on his promotion to the vice-presidency of the Bell Telephone Laboratories. A veteran of more than 30 years with the Bell System, he was formerly assistant vice-president in personnel relations.

About the middle of March, your Secretary had a telephone conversation with Buzz de Lima, who is president of the Roger Smith Hotel, and Ren Smith, who is head of the Physical Chemical Department of the Bureau of Standards, and found both well and enjoying life. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

• 1920 •

The Class may well take pride in the fact that a '20 man, Ed Ryer, succeeds another '20 man, Al Glassett, as president of the Alumni Association. Two mighty good men, if we do say so! Information about Ed and a very good picture of him were in the March issue of The Review, so look it up in case you didn't see it.

Pictured also was our own Ernie Huntress, Professor of Organic Chemistry at M.I.T., now appointed director of the Institute's Summer Session. As many of you know, summer activities at M.I.T. have developed enormously and this is a very important and difficult administrative post. Knowing Ernie, we can be sure it is in good hands. In addition to his teaching duties, Ernie is librarian and member of both the council and publication board of the American Academy of Arts and Sciences. He is an associate member of the Chemical Monograph Series of the American Chemical Society and a member of its Committee on Foreign Compendia. In 1949, he was a member of the Scientific Information Conference held in London by the Royal Society and served as representative of the American Documentation Institute to the International Federation of Documentation at The Hague. Our distinguished classmate has published nearly 100 scientific papers. He is the author of five books and has recently been engaged in biographical studies of distinguished men of science.

There is a little more news about Frank Maconi, whose association with Bird and Son was mentioned in last month's notes. Frank has done a lot of speaking on labor relations for the Associated Industries of Massachusetts, as well as for the Labor Committee of the American Leather Belting Assoication. His son, Roger, is in the Air Force and is presently in England. Major General Lyman P. Whitten has ended his tour of duty in Newfoundland and will return to the United States to take over duties of commanding general of the Middletown Air Matériel Area, with headquarters at Olmstead Air Force Base, Pittsburgh, Pa. He will be responsible for the logistics support of all Air Force installations in the northeastern portion of the country as well as in Europe and the Mediterranean areas.

Clyde Norton, whom we all enjoyed seeing at the 30th reunion, has left New York City and his present address is 3910 8th Street, N.W., Washington, D.C. Josh Welch has also left New York City and is now in San Francisco, address 101 Post Street. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Merritt F. Farren, former associate of Dorothy Draper, interior decorator, has been appointed business manager of Old Sturbridge Village, Mass., a lived-in and functioning reconstructed museum community. He will be in charge of production and merchandising of village products of contemporary design and craftsmanship, including the output of the cabinet shop, printing office, grist mill, weavers, furniture finishers, potter, metalsmith, and candlemaker. An architect and former contract division manager of John Wanamaker of New York, he had charge of furnishing and decorating the United Nations General Assembly Hall. He is the recipient of the American Institute of Architects medal and the Rotch Prize. He served as project manager for the construction of the Nebraska State Capitol and the chapel of the University of Chicago. Currently, he is secretary of the commission on architecture and the allied arts of the Protestant Episcopal Church. He and Mrs. Farren have a son and daughter. Former residents of Montclair, N.J., they are making their home in Old Sturbridge Village.

Samuel E. Lunden, a West Coast architect, has offices at 510 South Spring Street, Los Angeles 13, Calif. Lemuel Pope reports a new home address at 1462 Wesley Avenue, Pasadena 7, Calif. Chesterton S. Knight, partner in the management and mechanical engineering firm of George Knight and Company, Brockton, Mass., is general chairman of a campaign to raise funds for the new Goddard Memorial Hospital, a 136-bed medical center to serve Brockton and surrounding communities. Besides being a corporator of the new nonprofit hospital, Chick has been a member of the executive committee of the

Brockton Hospital, a past president of the Brockton Community Club and the Kiwanis Club, a member of the board of the Y.M.C.A. for 26 years, and its president for seven years. President of the Community Chest on two occasions, he is on the local council of the Boy Scouts and active in its camp fund campaign. He is a director of the Brockton National Bank, a trustee of the First Baptist Church, a member and past president of the Thorny Lea Golf Club, and, for the last two years, chairman of the Brockton Playground Commission. Chick and Mrs. Knight have a married son and daughter and two grandsons. Frederic B. Dadmun reports he frequently sees Jack Barriger and Herb DeStaebler at meetings of the M.I.T. Club of Chicago. Fred lives at 1400 Lake Shore Drive, Chicago 10. He is married and has no children.

Arnold R. Davis is in charge of a rubber chemicals laboratory engaged in technical service and development for the American Cyanamid Company, Stamford, Conn. He is a member of the American Chemical Society and the American Institute of Chemists, and is the author of numerous papers on natural and synthetic rubber. He and Mrs. Davis have three sons and a daughter: Leland, Iowa State; Norman, Boston University Law School; George in high school; and Martha in grade school. Adolph Denbin is chief statistician of the Baltimore Transit Company and lives at 5701 Cross Country Boulevard, Baltimore 9, Md. President and Director of the Lithuanian National Building and Loan Association, he is also a member of the American Institute of Electrical Engineers, the Society of Professional Engineers, American Transit Association, Baltimore Engineers Club, the Maryland Academy of Sciences, and the Mt. Washington Community Association. He has published papers on forecasting and transit operation. He is married and has no children. Robert B. Donworth is in charge of expansion and development for the Duquesne Light Company, Pittsburgh, Pa. He and Mrs. Donworth make their home at 5540 Dunmoyle Street, Pittsburgh 17. Bob, Jr., was graduated from Yale, Eleanor from Vassar, and James attends preparatory school.

Irving K. Peck has been made vice-president of the Columbia Gas System, Inc., with headquarters at the Union Trust Building, Pittsburgh 19, Pa. He had served since 1946 as vice-president and general manager of Manufacturers Light and Heat Company and Associated Pittsburgh Group Companies, Columbia affiliates, following his service since 1936 as president and general manager of the New York group of Columbia properties. Daniel P. Barnard, IV, research co-ordinator of the Standard Oil Company of Indiana and President of the Society of Automotive Engineers, was a speaker at the dinner of the southern New England section of the society in Hartford, Conn. The Review omitted credit to Henry W. Erickson'20, mining engineer with Allis-Chalmers in New York City, for assistance in preparing the article on the late Russell C. Johnson in our March notes. Henry and Russell were brothers-in-law. William B. Dudley is the owner of the Bentonville Cash Store of Bentonville, Ark. Bill is active in local affairs, serving as president of the school board and as a member of the hospital board. He is married and has no children.

Heralded by the Dallas, Texas, *News* as "America's leading advocate of super-railroading," and by the *Times Herald* as "one of the outstanding railroad figures in the country," John W. Barriger, 3rd, recently visited his native Dallas to deliver an address before the Society for the Advancement of Management. The *News* continues: "Barriger will discuss the management problems he has encountered since assuming the presidency of the long-bankrupt Chicago, Indianapolis and Louisville Railroad in 1946. In five years he has spent $25,000,000 in modernizing the Monon, made it the first Class I railroad in the country to become completely dieselized, and has seen it return a net profit in each of the last three years." Harold N. Ewertz, sales engineer, Graham Manufacturing Corporation and partner in the Col Vend Sales Company, distributors of ice cream bar vending machines, makes his home in Irvington, N.J. A former regional vice-president, chairman, and director of the York section of the American Welding Society and a past director of the Boston section of the American Society for Metals, he is also active in the National Grange and the Isaac Walton League. He and Mrs. Ewertz have four sons and a daughter.

Reminder to attend Alumni Day, Monday, June 9, and join the 1921 gathering at the Hotel Statler that afternoon before the stein banquet. — CAROLE A. CLARKE, *Secretary*, International Standard Trading Corporation, 67 Broad Street, New York 4, N.Y.

• 1922 •

All is in readiness for our 30th reunion at the Sheldon House, Pine Orchard, Conn. Our thanks go to Ray Rundlett and his committee who have so diligently made all arrangements which will insure another successful reunion. Let us hope that the weatherman gives us a break.

Professor Joseph H. Keenan of the Institute was one of the winners of the Freedom Award given by the Freedoms Foundation at its annual Washington's Birthday exercises held at Valley Forge, Pa. The award was based on Professor Keenan's magazine article entitled "Education for Freedom" which appeared in the February, 1951, issue of The Technology Review. Previous mention has been made in these notes of the awards made to Oscar Horovitz by the Amateur Cinema League for his moving pictures. Your Secretary, now having seen Oscar's pictures, can testify that the awarding committees made no mistake. Oscar has at his home full equipment for doing practically all of the technical work, and, in addition, has a good-sized projection room for his exhibits.

Duncan R. Linsley, formerly Senior Vice-president of First Boston Corporation, became chairman of the executive committee last January. Theodore T. Miller, Vice-president and Treasurer of the Dewey and Almy Chemical Company, has recently been elected to the board of directors of the Boston Fund, a mutual-type investment company. Homer L. Ferguson, chairman of the board of the Newport News Building and Dry Dock Company, resigned last January as a director of the Shipbuilders Council of America and was succeeded by John B. Woodward, Jr.,'13. Ferguson had been a member of the Shipbuilders Council since 1927, and prior to that was president and a director of America Shipbuilders, Inc.

Our versatile Frederick S. Blackall now has an added accomplishment. On February 5, he acted as guest editorial writer for the Hartford *Times*. His editorial, entitled "New Industrial Revolution," discusses the New England industrial situation, making particular reference to the question of a New England steel mill. His conclusion is that sooner or later New England will have a steel mill because economic conditions will demand it. In a preface to the editorial, the paper points out that Fred is president of the Taft-Peirce Manufacturing Company of Woonsocket, president of the National Machine Tool Builders' Association, and president of the Woonsocket Hospital. He is a past president of the New England Council and a former member of the Corporation of M.I.T. He is also a director of the Federal Reserve Bank of Boston, of the New York, New Haven and Hartford Railroad, of the New England Transportation Company, of the American Research and Development Corporation, and a vice-president and director of the American Wringer Company. In addition, he is proprietor of Orchard House Farm at Cumberland Hill, R.I., and is vice-president of the Rhode Island Public Expenditure Council and author of a report of the American Gage Design Committee published by the U.S. Bureau of Standards.

Lachlan Mackenzie has left the steel industry in favor of wood. For many months now he has been vice-president in charge of production for M and M Wood Working Company, Portland, Ore., one of the largest plywood manufacturers in the country. Dale Spoor, who has been in Washington for over a year where he established the Welding Equipment Section for the National Production Authority and then headed the Industries Branch of the Metalworking Equipment Division, left in January to return to his company, Air Reduction Sales. He is back in New York as manager of the Equipment and Process Sales Department of Air Reduction Sales at 60 East 42nd Street. Dale reports that while in Washington he saw Bill Boyer who heads the Aircraft Production Division, and he also encountered Bob Thulman and Billy MacMahon. Clate Grover reports that, at the February meeting of the Technical Association of the Pulp and Paper Industry, he encountered the following members of our Class: Royal Stone, Walter Lennon, Valentine Friedrich, Jr., and his son Tom'51, Henry Dimmick, Buzz Burroughs, and Clyde Benson.

J. Sterling Kelley of Stevens, Pa., died December 8, 1951. No other information is available to your Secretary at the moment. Kelley was a most loyal member of the Class, having attended every five-year reunion, and he will be missed. Our sympathy is extended to his family. — C. YARDLEY, CHITTICK, *Secretary*, 41 Tre-

mont Street, Boston 8, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

I am always writing these notes so far ahead that it is necessary to anticipate a little. Possibly by the time these notes are read the members of the Class will have the first of a number of mailings which the Secretary will make about our 30th reunion in 1953. The first of these mailings will be a general reminder and it will ask for class dues, which are collected once every five years, in order to finance the mechanics of the reunion.

The annual meeting of the Class will be held, as previously announced, on Alumni Day, Monday, June 9. A room will be available for the use of the Class after four o'clock at the Hotel Statler and the meeting of the Class will probably be called to order about five. The meeting of the Class is a social gathering, primarily, and we hope that members attending the Alumni Day affairs will drop in at any time prior to the alumni dinner. The class meeting itself is simply to discuss certain formalities, and last year it required only 10 or 15 minutes. The final decision on the place of the reunion will be made and there will be further development of reunion committees.

Since the last notes, announcements have been made of two members of the Class moving up to top positions in their respective companies. In January, Alfred E. Perlman, who has been general manager of the Denver and Rio Grande Western Railroad, was appointed executive vice-president. Roy G. Rincliffe was elected president of the Philadelphia Electric Company in February.

I am indebted to the *Railway Age* of New York and *Railway Purchases and Stores* of Chicago for data about Perlman's career, which began as a field construction draftsman on the Northern Pacific. He was assistant engineer of maintenance of way for the Burlington in 1935, he began as engineer of maintenance of way of the Denver and Rio Grande Western the following year, and was chief engineer from 1941 to 1947. He has been consultant on railway matters to the Reconstruction Finance Corporation and the DPC. He has served as consultant for the State Department on Korean railroads and for the government of Israel on its railway system.

The Philadelphia Electric Company's announcement of Rincliffe's election as president states that he joined the utility in 1923 as an engineering assistant. He subsequently held various positions, including superintendent of gas manufacturing, purchasing agent, manager of electric generating stations, and vice-president in charge of electric operations, becoming a director and executive vice-president in 1950. The Philadelphia *Inquirer*, March 3, 1952, devoted a column to Rincliffe on its financial page under the heading, "American Success Story." — HORATIO BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

• 1924 •

According to first-hand reports, the big M.I.T. fiesta in Mexico City was a huge success. Attracted quite a number of Alumni from the States. There's no record that any '24 men went down, although Bill MacCallum scored a near miss; but with Jack Nevin running things, the show was assured of success from the start. This has now become an annual affair complete with bullfights, floating gardens, and a merry round of varied activities. Next year, better see if you can't plan a late winter vacation and take it in.

Our Class continues to dominate southern California affairs. Newly-elected president of the M.I.T. club in Los Angeles is none other than Rockwell Hereford; Second Vice-President and Program Chairman, William H. MacCallum; and Secretary, Philip A. Herrick. A note from Bill gives further information about some of the other native sons. David K. Grant, the well-remembered Davy of the Dippy Davy Duo, is now in the real-estate business. Homer S. Davis, ex-publisher, has gone back to more technical pursuits, but Bill didn't say just what. Archie D. Carothers has a new job at the R.C.A. plant, working on air-borne radar. William G. de Koch seems to be rather an elusive individual. He's with Hogan Petroleum in Los Angeles, but spends most of his time in Canada or almost anywhere else. James F. Crist, Southern Company Vice-president, was on the West Coast for a stockholders' meeting in April. Bill says Jimmie has lost none of his old steam and humor, V.P. or no.

You probably read about Jimmy Doolittle's latest job, a presidential appointment to head a board to study safety control at airports, direct consequence of the New Jersey disasters. "He holds both master's and doctor's degrees from M.I.T., a rare achievement among military fliers," says the news report. One of our other government officials came in for a columnist's profile recently under the head: "Coogan's Square Jaw Impresses Washington." The story opens: "A big man, with a square-cut New England jaw and a determined look has come [to Washington] to take charge of defense military housing." It goes on to say, ". . . mediocre people have been given top jobs here because none else could be found, or politics held sway. Coogan is a different story." The accompanying photo shows that Tom's square jaw has rounded out a bit in recent years, but maybe he'll lose that in the job of building 400,000 housing units in 18 months! Martin J. Buerger has picked up another honor, and this one is rather unique. He is now a foreign member of the Brazilian Academy of Sciences, chosen in consideration of his "valuable contributions to science and most helpful collaboration with Brazilian research workers." This is in the field of x-ray crystallography.

Again we regret the necessity of reporting the passing of another classmate, H. Webster Thomas, of Lexington, Mass. For some time Webster had been New England manager of the leather chemicals department of Rohm and Haas. Active in a great number of town organizations, he leaves his wife and two sons. To them goes the sympathy of the Class. — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Information has recently reached us concerning the deaths of several members of the Class. It is with regret that we announce the death of Clarence F. Latham, VI, February, 1949. Lieutenant Brandt W. Wilson, XIII-A, May 29, 1951, and Henry E. Prady, I, on January 3, 1952. Of much more recent date, we have information that Myron N. Hanover, VI-A, passed away some time early in March. The exact date and other details are not available at this time.

We have but little news concerning other members of the Class. J. H. Fielding, X, who, for the past several years has been with the Armstrong Rubber Company plants in West Haven, Conn., has recently taken on an additional responsibility as a member of the Editorial Advisory Board of *India Rubber World*. Harry P. Henderson, III, of Woodbury, Conn., who is associated with the New Departure Division of General Motors Corporation, has recently been appointed superintendent of the primary operations at the division's plant. Harry has been associated with the New Departure Division since November of 1925, having graduated from Tufts College with a degree in chemical engineering in 1924, following that with graduate training with our Class.

Many of you may be interested in an article which appeared in the *Motion Picture Herald*, New York City, on February 9, 1952. This article was written by Gio Gagliardi, VI, and is entitled, "A Simple Way to Check Projection System Efficiency." Gagliardi has been a theater projection and sound and maintenance engineer for more than 20 years. Until recently he was a technical executive with Warner Brothers Theaters. — F. LEROY FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

• 1926 •

From Hartford, Conn., comes the news that Bob Conly has been named assistant vice-president of the Aetna Life Affiliated Companies. Bob has been with Aetna since 1926 — starting in Philadelphia, moving to Albany in 1942 as manager, and to Hartford in 1946. Brad Young has been made division traffic superintendent in Pittsburgh for the Pennsylvania Bell Telephone Company. Bob Richardson, who has been with Ethyl Corporation since 1933, has recently been named sales representative for the company for the Philadelphia area. Congratulations to these three classmates for their fine promotions! Another important news item recently appeared in the Boston *Globe* about Jim Killian, whose speechmaking ability has always been the envy of your Secretary. At Washington's Birthday exercises held at Valley Forge, Pa., a second place award of $200 was won by Jim for his public address entitled, "Our Shared Convictions." This was the valedictory address to the Class of 1950. From the Class, most hearty congratulations to Jim.

Now, because Whit Ashbridge has come through in such fine fashion, we are

going to omit the biographies this month. This will give us room to publish most of his very interesting letter. As many of you will recall, Whit is located in Caracas, Venezuela, with Frederick Snare Corporation. Perhaps many of you are sloppy geographers, like your Secretary, and remember that Venezuela is somewhere in the northern part of South America. With my atlas before me I can tell you that if you were to spin South America on its north-south axis, Caracas would be the northern axis. Thus oriented, we will go right into Whit's letter:

"This letter is going to be mostly about bulls. On Sunday I took my oldest son, Dick, to a bullfight, the third he has seen, and he loved it. The bulls were from Spain – Miuras, one of the best breeds of fighting bulls. They are very strong, and each bull managed to knock over a couple of horses and one horse, poor thing, was killed. The men, however, were not up to the bulls and were afraid of them as the Miuras have quite a reputation, and from the way they roughed up the horses, it was easy to see what they could do to a *torero* if he made the least slip. As a result, the bullfight was quite spotty with some good and some bad parts. One of the *toreros* was awarded an ear for doing a good job and one who did very badly was fined 2,000 Bolivars 'for defrauding the public.' Yesterday I got into something completely different. Ismael Cottin, our able purchasing agent, and I went out to Los Cortijos de Lourdes to see a lot purchased by a firm that we hope will turn out to be a client, took some measurements and levels, and then went out to the little town of Petare to see the municipal engineer. To our surprise, the Municipal Building was all locked up and they told us that it was a local holiday. Diagonally across the square was the church and we saw that the street next to it had been barricaded up to a height of about seven feet with small logs lashed with rope to telephone poles, and there was a large crowd gathered around. We inquired what was going on and they told us that the day before and that afternoon there were *toros coleados*, which means that they turn loose bulls in the streets for the populace to dodge and chase so that all the youths who would like to be bullfighters have a chance to wave a bit of red cloth, along with several hundred others, as the bulls charge through crowded streets. There was a high sidewalk, perhaps six feet above the street, along one side of the church where there were a lot of women and children and one or two men. All the other men seemed to be down in the street waiting for the bulls to appear. Since we were there merely as spectators we climbed around the barricade and found ourselves a nice spot on the elevated sidewalk about opposite the middle of the church where we could see over two or three rows of women and children ahead of us. Just as they were about to turn loose the first bull, a policeman came along and told us that this space was reserved for women and children and that all the men had to be in the street. By that time so many people had crowded in behind us that we could not get back behind the barricade and the policemen insisted that we jump down into the street, thereby very suddenly changing our status from that of spectators to participants. I might add that I was very much surprised by this turn of affairs, but we decided that if several hundred people in the street could be there without getting too badly hurt, we were probably fairly safe. However, as a precaution we found ourselves a pole on the sidewalk behind which we could dodge if the bulls should show any great interest in us. This put us down about the middle of the two blocks which were barricaded off and it was interesting to see the faces of the children lined up behind the barricades waiting to see what happened. Inside the *rejas* (grills on the windows) were lots of people watching and in one house they had boards across, one above the other, so that children were sitting three deep in the very high windows. The crowd in the street consisted mostly of youths in their teens, many of them armed with a red cloth like a *muleta* which the bullfighters use in the final act of the bullfight when they kill the animal. Instead of a sword, many of the lads had sticks. Naturally none had swords, as the bulls were not intended to be killed but merely to provide amusement. All of a sudden we could see a ripple of movement as the crowd opened up ahead of a bull heading our way at full speed. Some of the people climbed the *rejas* from the outside, others climbed up poles, but the majority merely stood their ground, simply opening up a lane for the bull and waving their red cloths at him as he came by. Occasionally the bull would hook his horns sidewise at someone, but most of the time he just ran straight ahead. There was much screaming and laughing from the onlookers and I might say that I felt a little too old to start bullfighting and must admit some feelings of apprehension as I saw the first bull heading toward us. He went by on our side of the narrow street and I could have reached out a hand to touch him or waved a handkerchief in his face as did some of the people, but I still considered myself more or less of a spectator, even though in the midst of all the excitement. Each bull would rush up to the end of the street and then have to make a turn at the barricade and head back. Some ran the full length of the street several times, others did not do so well, as the crowd would close in the moment the bull slowed down or if he showed any signs of indecision, and people would grab him by the horns, by the tail, and sometimes even climb up on top of him, if enough people had hold of his horns to make this fairly safe. In between the bulls, there was some music from the sidewalk beside the church. The band consisted of drums, a bass fiddle, a trumpet, and a saxophone. We thought we were relatively secure behind the telephone pole until an old man with gray hair and mustache told us rather casually that the afternoon before a man had been killed right where we were standing and it turned out that it had been the father of Joselito Torres, a Venezuelan bullfighter. We thought that this was just a story to scare us and did not pay too much attention to it. However, later on when we had moved to another location and the fifth bull came out we noticed that he was quite a big rascal, very black, and with long curving horns. A man just behind us called our attention to the fact that he had had the tops of his horns cut off and he said that this was because that same bull had killed the man yesterday, so this seemed to confirm the other fellow's story. This bull created quite a stir by getting up on the elevated sidewalk near the music and chasing many of the spectators down into the street. He also went through a narrow space between a pole on the other side of the street and the wall of the house, knocking down a couple of people, although fortunately not hurting them badly. After six bulls had come out we thought things were about over and were ready to retire, but one of the policemen with a knowing wink said that there was still more to come. He was certainly right, as before we realized it they had turned loose two bulls at a time which made for quite a bit of excitement as we had to dodge one and keep an eye on the other one coming not far behind. No sooner had these two bulls completed a trip up the street and back than they turned loose all six at once, but fortunately by this time the bulls were pretty tired. They certainly cleared the street and it was remarkable to see how the people disappeared, either flattening themselves against the walls of the buildings as we did, or climbing up the *rejas* or the barricades. That completed the day's excitement as far as the bulls were concerned and so we left. However, the fiesta was apparently scheduled to continue on into the night, and there was a puppet show just getting under way in the public square. I had seen in the movies pictures of bulls running in the streets of Pamplona in Spain and I had heard the old saying about 'having a bull by the tail,' but I never thought for a moment that I would get so closely involved in any such thing.

"P.S. I had written the letter before seeing the newspaper clipping telling of one killed, 60 wounded in the course of the fiesta – the lucky thing is that I hadn't known about the danger before getting mixed up in the affair!" Many thanks, Whit, for such an interesting contribution to the class notes, and cheerio to all of you until June. – GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston, Mass.

• 1927 •

Walter Johnson brings us up to date on himself with the following: "I have left the Veterans' Administration in D.C. and am now with the Air Research and Development Command, a recently established Air Force command with headquarters in Baltimore. As the name would imply, the command has responsibility for all research and development work within the Air Force, this work being carried out at nine different Air Force centers scattered all over the country. The work includes guided missiles, flight testing, electronics, engine development, weapons systems, defense systems, armament development, and so on. Of particular interest to Technology men is the fact that the work of the Air Defense Laboratory of the Air Force Cambridge Research Center is

being carried out by M.I.T. under contract with the Air Force. Units of the Cambridge center are now scattered all around Cambridge and Boston and will be brought together in time at a large research center to be located in Bedford adjacent to Hanscom Air Field. One wing of the Air Defense Laboratory there will be ready for occupancy this spring. I am working in the Air Installations Directorate of the command as a civilian civil engineer. We supervise and monitor design and construction of new facilities at all centers and are in charge of maintenance and operation of existing facilities, plus long-range construction planning. We have a woeful lack of engineering personnel which keeps the rest of us plenty busy all the time."

Charles Smith has moved to "Wytegate," Dorsey Lane, Anchorage, Ky., and sends us the following: "I left the management consulting firm of Ebasco Services in New York City in June and joined the Range and Water Heater Department of General Electric the first of July. We moved down to Louisville in September in temporary offices at Reynolds Metals Company and are planning for a brand new plant and equipment for the manufacture of electric ranges and water heaters. This plant will be part of the new Appliance Park project at Buechel, Ky. We have purchased a nice home out in Anchorage and will be glad to see any of the members of the Class who might be coming through Louisville from time to time. I have already signed up for the 25th reunion and hope to see the fellows on Cape Cod in June." Here is the latest from Harland Sisk: "After a stay of five years in Holyoke, Mass., where I was manager of the G.E. plant, I returned to Pittsfield last August and am now manager of the Manufacturing Distribution Transformer Department. My wife, daughter, and I live at 271 William Street." Hector Moineau is secretary of the Marlboro Wire Goods Company, Marlboro, Mass. He went to work for this organization right after leaving school. You will see Hector at the reunion.

Hank Kurt is still undecided about the reunion plans, but his description of his recent activities follows: "I moved to Huntington some 10 years ago, and about three years ago we built our own home on the shore of Lloyd Harbor. If any of the Class are thirsty while cruising the Sound, tell them to go ashore on the beach on the south side of Lloyd Harbor, and a three-minute walk up the road will locate our house – name sign at the driveway entrance. I'm still with the Grumman Aircraft Engineering Corporation, flying actively (even jets) but basically in charge of subcontracts, a busy job these days. I don't recall what an integral sign looks like."

The Springfield, Mass., *News* reports General Fritz Glantzberg's farewell party in Savannah, Ga., as follows: "Gen. Glantzberg has been in charge of Hunter AFB since 1949 and at the banquet he praised the splendid cooperation received from the people of Savannah who made the rapid growth of Chatham Field possible. The residents went all out for Gen. Glantzberg as the Chamber of Commerce united with the Rotary Club in promoting a Fritz Glantzberg Day. The program started in the morning with a wing review, included a dedication of the new runways, luncheon, the landing of the City of Savannah on the new strip, presentation of the yellow and blue flag which has identified Savannah's own huge bomber, to Mayor Olin F. Fulmer by the general and closed with the dinner and dance. One of the high lights of the banquet was the reading of a resolution adopted by the Rotary Club which said in part: 'Now, therefore, be it resolved, that the Board of Directors of the Rotary Club of Savannah, in meeting assembled, feeling a personal and civic loss in the transfer of Gen. Glantzberg from this city, expresses to him their great regret in Savannah's and Rotary's loss through his departure.'" A former resident of Savannah, General Glantzberg has assumed his new duties at Kirkland Air Force Base, N.M., but will fly to the reunion from New Mexico.

Being treasurer of three clothing companies and assistant treasurer of another "doesn't mean a thing" according to Harry E. Franks. He also says that the clothing business is now "pretty rugged." It won't be rugged enough, however, to prevent him from being at the reunion. It is good to hear again from Bob Dorey and we quote from a recent letter: "Our move to Wayland was dictated by Mrs. Dorey's rapid progress in breeding top-quality cocker spaniels. Two of our dogs have already made points towards their championship, while the third, a puppy, placed second in the Futurity Stake at the Hotel Roosevelt Cocker Specialty Show the early part of January, and should have no trouble making her championship. In addition we have three puppies being carefully watched as they show similar promise. We simply had to have more room for the kennel and we are very fortunate in locating the property in Wayland which runs about three acres with a large frontage which insures plenty of space for the dogs and remoteness from our neighbors to the extent that a bit of barking will not bother them. I maintain an office here at the house, a supplementary one in Waltham, and have a small sheet metal shop in Cambridge which, however, is under a different name. We are quite busy with problems involving temperature indication and control, as well as furnishing and building constant temperature baths, ovens, incubators, and so on, for laboratory and hospital requirements."

Carl Sydenstricker is with Westinghouse in the engineering and service department. Theoretically, he lives in Pittsburgh but spends a large portion of his time on the road. The *Telegram-News* of Lynn, Mass., brings us up to date on Leslie Weed: "The Lynn Section of the American Institute of Electrical Engineers will hear a lecture by Mr. L. J. Weed, head of Distribution Division, Engineering and Construction Department, Boston Edison Co. Since graduation he has been with the Boston Edison Company and for many years he has been active in AIEE work. For the past six years he has been a member of the executive committee and is now secretary-treasurer of the Boston Chapter of the Institute. He makes his home in Wellesley, Mass."

This column has quoted newsclippings about Jim Chirurg for many years. He was recently remarried and bought a home in Danvers, Mass. In 1951 his advertising concern (James Thomas Chirurg Company, Park Square Building, Boston 16, Mass.) had its biggest year in volume and profits, and 1952 looks good. He is serving on the publicity and public relations committee of the Chamber of Commerce of the United States in Washington, and on the public relations committee of the American Association of Advertising Agencies. – The Du Pont Company has announced that J. Raymond Buckley has become manager of the newly-created Personnel and Industrial Relations Division of the Fabrics and Finishing Department. He has been with the company since 1927. – JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

• 1931 •

A nice note arrived the other day from Otis Sibley, XIII. He writes that after six years of inactivity the Bureau of Ships recalled him to active duty with the rank of commander. His present tour of duty is at the Portsmouth Naval Shipyard where he is working in the Production Department. In his note he mentioned that he would be glad to compare notes with anyone who would be glad to write to him. His address is Tenney Hill Road, Kittery Point, Maine.

George Bunker recently has been elected president and general manager of the Glenn L. Martin Company, Baltimore. Previous to his post at Martin, he had been associated with Trailmobile, Inc., of Cincinnati, a subsidiary of Pullman, Inc. In the news release they gave George's age, and it seems odd to see ages in the 40's actually in print. Time is flying and we are all in the same bracket. Another news release paid a high compliment to Dick Kropf for his work in the development of Monocord Threads (a product of Belding Heminway Corticelli of Putnam, Conn.) into commercial production. Dick is director of research and vice-president of the company. We certainly missed him at the last reunion.

Locally, a news note from Needham, Mass., announced that Mike White was entering the field of politics and that he planned to run for the Planning Board of the Town of Needham. – AUGUST L. HESSELSCHWERDT, JR., *Secretary-Treasurer*, Room 3-240, M.I.T., Cambridge 39, Mass.

• 1932 •

Tom Rhines was promoted in December to the job of assistant chief engineer of Hamilton Standard of United Aircraft Corporation of East Hartford. He has been with United Aircraft since graduation and, since 1944, he has served as chief development engineer of Hamilton Standard. Jacob Millman has been appointed professor of electrical engineering at Columbia. He is the youngest professor there. He is married to Sally I. Dublin, formerly of Lawrence, and has two children, Richard S., and Jeffrey T. Al Dietz spoke in January before the M.I.T. Club of the Connecticut Valley. He spoke about Japan, which he had recently visited.

By this time you have made your plans to attend your reunion. Perhaps this brief notice will serve as a reminder of the more detailed information you have been receiving by mail. The 20th reunion of our Class will be held June 6, 7, and 8 at the Curtis Hotel, Lenox, Mass. A full program has been planned to make this a week end to be remembered. Tom Sears, the chairman of our reunion committee, dropped me a note to the effect that Ike Schwartz of New Bedford is chairman of the reunion angling (fishing, to you) committee. Call up that classmate whom you haven't seen since the 15th reunion and make a date to join us in Lenox on June 6! — CLARENCE M. CHASE, JR., *Secretary*, 1424 East 7th Street, Plainfield, N.J. *Assistant Secretaries:* CARROLL L. WILSON, Cannondale, Conn.; WILLIAM A. KIRKPATRICK, Allied Paper Mills, Kalamazoo, Mich.

• 1934 •

We received a letter from Bob Roulston who is back in the Air Force again as a lieutenant colonel. He was recently transferred from Chicago to Montgomery, Ala., where he is now living with his wife Barbara. He is being given the latest training in problems of logistics, transportation, procurement, research, war planning, supply, and maintenance. In case any of you want to reach him, his address is 124 Frederick Street, Montgomery 6, Ala.

Ernest J. Greenwood has recently been appointed chief engineer of Norden Instruments, Inc. He was formerly chief of design for Chance Vought Aircraft and subsequently held that position at Fairchild Aircraft. He was with the engineering department of Hamilton Standard prior to joining Norden. C. A. Cogan has been appointed superintendent in charge of projects, capital expenditures, and miscellaneous contracts sections for the manufacturing department of the Standard Oil Company of Indiana. He became associated with Standard Oil in 1934 as a chemist at Whiting.

Peter Barry recently broke into the news in Rochester, N.Y., where he is a Republican city councilman. It seems that Pete is having a hard time resisting the temptation of putting out to sea. Back in 1934, when he finished at the Institute, he went out to the West Coast and was looking for a job. He wangled a job in the engine room of an Orient-bound liner and worked up to engineer on a South American liner. At present he is assistant superintendent of the Rochester Gas and Electric Corporation, steam distribution division, but the call of the sea is still strong and Pete would like to take time off for one more cruise.

Robert A. O'Brien, research manager for the American Society of Mechanical Engineers in N.Y., has been appointed assistant to the chairman of the mechanism and propulsion research department at Armour Research Foundation of Illinois Institute of Technology. He is a specialist in administering research and development programs and will assist Dr. Nothmann, department chairman, in coordinating the engineering and administrative problems on all projects in the department. During the War he was assigned to technical and administrative duties in the Navy Bureau of Ships research and development program, holding the rank of commander. He has been research manager for the A.S.M.E. since November, 1946, and has been secretary to the Research Committee and several project committees for A.S.M.E. and coauthor of several papers on intergranular attack in boiler drums and tubes. Bob has four children and he and his family live at 201 9th Street, Wilmette, Ill.

R. C. Gunness has been made an assistant general manager of the manufacturing department of the Standard Oil Company of Indiana. He was previously manager of the company's research department. At present he is on leave, serving as vice-chairman of the Research and Development Board of the Department of Defense in Washington. On return from duty, he will take his new position with the company. Dr. Gunness was assistant professor of Mechanical Engineering at the Institute for several years before he joined Standard Oil in 1938 as a group leader on the research staff. He advanced through several positions to become Standard Oil manager of research in 1947. He has done original work in distillation and heat transfer and has many publications in this field.

Norman B. Krim, Vice-president and manager of the Raytheon Manufacturing Company, recently gave a talk on Raytheon and electronics. He has been associated with Raytheon since 1935 and an officer of the company since 1948. He is a member of the National Production Authority, Receiving Tube Industry Advisory Committee, Receiving Tube Subcommittee of the Munitions Board Electronic Equipment Industry Advisory Committee, and the Tube Division, Radio and Television Manufacturers Association. Henry W. Mertens has been appointed new division manager of the Central Maine Power Company. He was previously a member of the construction department of Southwestern Bell Telephone Company before joining Central Maine Power. Francis S. Doyle, who was formerly design executive with Curtiss-Wright, Martin, and Boeing, is now with the Gyrodyne Company working on helicopter and convertiplane projects.

Elbert John Baril has been in charge of preparing the master plan for the improvement of transportation facilities for the City of Boston. This plan is to be used as the key in future planning of entrant roads, public transportation, and methods of handling traffic. John B. Skinner has been recently appointed Deputy Grand Knight of the Cambridge Council No. 74 of the Knights of Columbus. He is employed by the State Department of Labor and is living in Cambridge. Walter S. Kut was recently married to Helen Praisner, daughter of Mr. and Mrs. John Praisner of 436 South Front Street, New Bedford. Walter is a professor of mechanical engineering at Cooper Union. The couple will reside at 1470 West Terrace Circle, West Englewood, N.J. William Pollak was married recently to Irene Bass, daughter of Mrs. Abraham Bass, 75 Tudor Street, Chelsea. The couple spent their honeymoon in Florida. — JOHN G. CALLAN, JR., *General Secretary*, 184 Ames Street, Sharon, Mass. ROBERT C. BECKER, *Assistant Secretary*, Chile Exploration Company, Chuquicamata, Chile, South America.

• 1937 •

As we come right up to our 15th reunion, we are all anxious to renew school friendships, swap experiences, see what kind of a wife the other fellow got, and of course look at the pictures of the children. Our able committee has made all the necessary arrangements for us to do just that plus a few other things — such as swimming, golf, tennis, elbow bending, or whatever suits your fancy. In case you haven't heard, the big shindig begins on June 6 and runs through Monday morning, June 9th. It is to be at the Weekapaug Inn at Weekapaug, R.I., seven miles from Westerly.

Regarding the big event, Joe Heal sends the following information about the third reunion-committee meeting: "The third reunion-committee meeting was held at the home of Phil Peters on March 19. Mr. Grandi, business manager of Weekapaug Inn, was present to answer questions on the various phases of the reunion. The more we hear of the location, the more we feel we have been quite lucky in securing it, as there are all the facilities desirable for a well-rounded reunion week end. As of this writing, we now have 82 persons definitely planning to come, 16 more signifying 'maybe,' and it is expected that about half the men will bring their wives. Here is the list of those now [March 20] planning to attend: Phil Bliss, John Booton, Herman Brettman, Alfred E. Busch, D. J. Cestoni, F. R. Claffee, Winthrop Comley, Edward V. Corea, Leo R. Dantona, George S. De Arment, Charles Dierksmier, C. C. Dodge, George W. Ewald, Albert C. Faatz, Jr., Ernest A. Ferris, Earl Fraser, Max Gerson, Frank E. Goddard, Jr., R. H. Goldsmith, Harry B. Goodwin, K. P. Goodwin, John J. Hanlon, Rutherford Harris, Josiah S. Heal, W. H. Healey, E. T. Herbig, Jr., E. L. Hobson, W. A. Johns, Charles R. Kahn, Richard Karch, Lester M. Klashman, James G. Loder, James D. McLean, William J. McCune, Jr., Robert D. Morton, Gilbert C. Mott, J. A. Newman, Mortimer H. Nickerson, John B. Nugent, Philip H. Peters, E. C. Peterson, Walter Regnery, Allan I. Roshkind, Robert P. Rudy, Jerome Salny, Rolf E. Schneider, Walter H. Sherry, Joseph Sousa, Harry S. Stern, Jr., David N. Summerfield, James R. Thomson, Robert H. Thorson, E. F. Tibbetts, J. C. Webb, Ralph P. Webster, Jr., George Wemple, G. R. Weppler, Walt Wojtczak, A. A. Woll, G. R. Young, H. A. Zimmerman.

"For those who wish to spend Saturday or Sunday touring the countryside, we find that the Vanderbilt house in Newport, 'The Breakers,' will be open to visitors, as will the large marine museum at Mystic, about 12 miles from Weekapaug. There are two golf courses available: one with $2.00 greens fees, and one with $5.00 greens fees. In order to arrange for caddies, the entertainment committee should know in advance if you wish to play. Tennis will be available for those of the Class who can still walk, as well as horseshoes, bowling-on-the-green, table tennis, and what have you. The class re-

union banquet will be held Saturday evening at 7:00 P.M. with Phil Peters as toastmaster. The banquet will be preceded by a cocktail party and followed by a dance. There will be a good old-fashioned clambake Sunday noon, to be held outside, weather permitting. This will undoubtedly be the biggest and best reunion for our Class."

Getting back to the present and some of the past, we find that the Class of '37 is right in the midst of the industrial, commercial, and military life of our country. Bill Bergen is vice-president and chief engineer of the Glenn L. Martin Company in Baltimore. Charles E. Reed has been named general manager of the new Silicone Products Department of the General Electric Company, with headquarters in Waterford, N.Y. Down in Houston, Texas, George Horton is a director of the South Texas National Bank as well as the president of Horton and Horton, Inc. Bob Thorson, who is one of our able reunion-committee members, operates the Thor Roofing Company in Medford, Mass. He is active in community life as well as the Class of '37; we'll bet he isn't home very much with a roster of at least six clubs, chambers, lodges, and committees to take his time.

In the military, we have at least one general – Brigadier General James McCormack, who recently became the director of nuclear applications at Air Research and Development Command Headquarters at Baltimore, Md. He received the Distinguished Service Medal for his work as director of the military applications division of the Atomic Energy Commission, where he served for more than three years. At the University of Rochester in New York, Gouq-Jen Su has been appointed acting chairman of the Chemical Engineering Department; he has been on the faculty since 1947. Dr. Su has had a variety of experience, including industrial engineering in China. We hope to see a great number of fellows like Dr. Su at the reunion; we can keep them busy telling us of their interesting experiences. For instance, we would like to see Bob Vogeler who, as you know, has had some unusual experiences – slightly foreign to the general run of engineering work. Bob gave a very interesting discourse at a meeting of the M.I.T. Club of Northern New Jersey on February 4, and we were very fortunate in seeing the television show based on his recent experiences.

According to what we can find, our Class has the only feminine doctor of science in Chemical Engineering in Institute history. The one we are talking about is Margaret Hutchinson Rousseau who is with the Badger Process Division of Stone and Webster where she is a big wheel in the design of fractionating towers of the Anglo-Iranian Oil Company in Abadan, Iran, the penicillin plant for Commercial Solvents Corporation in Terre Haute, Ind., and the plant and equipment for National Distillers Corporation in Peoria, Ill. An ethylene glycol plant was recently in the process of construction deep in the heart of Texas, when an indignant workman watching a tall, blonde beauty boss the project, said to his foreman: "Who does that dame think she is, strutting around here?" "Oh, her!" the foreman shrugged with a grin, "Well, I'll tell you Buck, she's just the dame who designed this whole darn plant." That is her favorite story and is typical of the amazement that greets her introduction as the designer of so many multi-million-dollar chemical plants and oil refineries. She is married to William C. Rousseau and the couple live in Reading, Mass., with their five-year-old son.

We see by the papers that Frank J. Mather was married last fall in Falmouth, Mass., to Mrs. Willia Cornelius of Falmouth. Frank was with Gibbs and Cox, naval architects, for five years before going with the Woods Hole Oceanographic Institution in 1945. There aren't very many bachelors left among our ranks and I guess we can just about give up hopes on most of them. Bob Fischel is one of these. We have done our best, but so far to no avail. Well, anyway, let's all get together June 6th at the Weekapaug for a rousing good time! – WINTHROP A. JOHNS, *Secretary*, 34 Mali Drive, North Plainfield, N.J. WALTER T. BLAKE, *Assistant Secretary*, White Sands Proving Ground, Las Cruces, N.M.

• 1938 •

Notes this month are brief, but they include all the information which has been received: Walter Johnson, now a sales engineer with the J. E. Hammill Company, addressed the power engineers of Worcester this winter. The subject of his talk was "Modern Trends in Air Conditioning." Also in the news is Morris Beckman who has been appointed associate professor in the School of Engineering at the University of Kansas at Wichita.

From change of address notices we note that Don Barnaby is now with Kyle Products Plant of Line Material Company, Milwaukee. Bob Sweitzer is with the American Water Works Service Company, Inc., in Philadelphia. – ALBERT O. WILSON, JR., *General Secretary*, 24 Bennington Road, Lexington 73, Mass. *Assistant Secretaries*: DAVID E. ACKER, 210 Woburn Street, Lexington 73, Mass.; FREDERICK J. KOLB, JR., 211 Oak Ridge Drive, Rochester 12, N.Y.; RICHARD MUTHER, 116 West 67th Terrace, Kansas City, Mo.

• 1940 •

Your Assistant Secretary is responsible for most of the news this month. In addition to his own letter, he enclosed one from Jack Berges and also a duplicate of a letter from Gary which appeared in last month's column. Marsh writes: "Gary had written me in August for some help in repairing his Oldsmobile station wagon and I kept his check for the class dues because I thought it would force me to write you soon. I was astounded when I checked and found that so much time had elapsed. Anyway, I've finally gotten started and I'd better make a good job of it, as the Lord only knows when the next time will come. First, enclosed is Gary's check for his class dues. Second, today I received a letter from Jack Berges, a brother Chi Phi, as well as a classmate, who has recently come to the Midwest from New England. I am also enclosing his letter for your use in the Review notes. He now lives the closest to me of any classmate of my acquaintance, only 135 miles! Third, I am enclosing a check of $2.50 for my own dues through 1955. You should now have a healthier treasury balance.

"As for some personal news for the class notes, I am forced to start with the fact that Bobbie and I now have four sons. At the time of the reunion it was only three and we were hoping for a girl in a couple of months but . . . I have now joined Bing Crosby's fraternity. Last November Bobbie and I took a trip to New York and Boston and were unfortunate enough not to see a single classmate. When passing through Hartford we tried to call Don Ross on the telephone but there was no answer, and we had to hurry on to Wellesley for dinner that night so we couldn't wait to try later. I had a Christmas card from Don shortly after he had been transferred from Albany back to the home office. After 12 years I am still a small cog in the wheels of General Motors. With the Oldsmobile Division's Engineering Department for the last five years, I was one of the designers of our rocket engine. Currently I am carrying the title of field service engineer which simply means that I help the Service Department correct the new problems owners may have with Oldsmobiles. As for my activities outside of my family and job, I am currently chairman of our section of the Society of Automotive Engineers, president of our local chapter of the Toastmaster's International, and director of the Lansing Duplicate Contract Bridge Club. Outside of that I manage to take the family north skiing about every other week end during the winter. Maybe I should use that line-up as an excuse for not having written, but I won't as the truth is that I am a very poor correspondent. I think I have said about enough for this trip, Al. I still remember you at school running around that track for Oscar. I wasn't a track man myself but I was an assistant manager for a while. Berges asked about Rafael Martinez. He lives in Puerto Rico with his wife Julie and has two sons." A letter with so much news was well worth waiting for, only now that you have found my address please don't wait quite so long to write, Marsh.

In his letter to Marsh McCuen, Jack Berges included the following: "Since you are assistant secretary for the Class of 1940, I will kill two birds with one stone and make this a letter for the class notes as well as one to you personally. Since I saw you at the reunion in 1950 I left Worthington to join the Air Conditioning Division of General Electric Company and I am located in Fort Wayne, Ind. At the present time, I am listed as supervisor of engineering services which means that I have charge of the laboratory, drafting room, and all other miscellaneous junk that no one else wants to handle. You will be interested in knowing that on a recent trip to Schenectady I spent an evening with Jerry Coe'42. He is doing very well with General Electric in the silicon field at the Waterford plant and has a charming wife and daughter. I had considered myself a confirmed New Englander, but since New England is dying or is dead industrially and since opportunity beckons from the Midwest, I felt that I would pull up stakes and see how the other half lives.

I am firmly convinced that I will never become attached to Indiana but I enjoy working here with G.E. and will probably be around for a few more years at least. I am now the father of three boys, with a girl planned for early summer. We feel that every family should have an even number so that the grapefruit will come out even. I understand that there are some class dues that I should pay, and if you can tell me how much they are and to whom I should send them I will be glad to contribute."

For the information of Jack and other classmates who may have missed the earlier announcements, class dues are $0.50 a year or $2.50 for five years and should be sent to Al at the address at the end of this column.

It is with regret that I report the passing of Lieutenant Colonel James L. McGehee, who received his master's degree in Course II with us. The following item is taken from the Washington, D.C., *Evening Star* for December 25, 1951: "Lieutenant Colonel James L. McGehee, 41, Army ordnance officer who participated in 10 major campaigns in World War II with the 3rd Infantry Division, died Saturday of cancer at Walter Reed Hospital. Col. McGehee had been assigned to the General Staff, Procurement Division, at the Pentagon, since 1948. He lived at 4801 South Fourth Street, Arlington, Va. Col. McGehee was born in Picayune, Miss. He entered the Army in 1929 and won an appointment to West Point through a servicewide competitive examination. He attended the Army's Military Academy Preparatory School at Fort McPherson, Atlanta. He was a member of the 1935 academy graduating class. In 1940, McGehee received his master's degree from . . . Technology. He also was a graduate of the Army Finance School and the Chemical Warfare School at Edgewood Arsenal, Md. Col. McGehee was stationed at Schofield Barracks in Hawaii when the Japanese attacked Pearl Harbor, December 7, 1941. He immediately was sent to the 3rd Infantry Division and served as division ordnance officer throughout the war. Col. McGehee was with the division in its drive through North Africa, Sicily, Anzio, Italy, France and Germany. He received a Bronze Star with one Oak Leaf Cluster, the Purple Heart and the Legion of Merit. After the war, Col. McGehee was in Germany for six months with the occupation forces. Col. McGehee leaves his wife, Mrs. Phyllis Elizabeth McCune McGehee, whom he married at the West Point Chapel the day after his graduation. Also surviving are a daughter Kathryn Grace McGehee; his parents, Mr. and Mrs. John J. McGehee; three sisters and a brother."

George Pollak has written "From Dover Straits to Corregidor Deep," an article which appeared in the February, 1952, issue of the *United States Naval Institute Proceedings*. Dr. Pasquale J. Pesare who received the master of public health degree with us and in 1942 also received the doctor of public health from Technology, was given a testimonial dinner last January, shortly after opening his office for general practice of medicine in Providence, R.I. Prior to entering private practice he was employed by the Rhode Island State Health Department as state laboratory consultant, and before that he taught public health at M.I.T. and was an associate professor in preventive medicine and public health and director of the Department of Preventive Medicine and Public Health at Georgetown University. Major Stanley C. Skeiber has been assigned to the Redstone Arsenal in Alabama. John Leschen has been appointed liaison representative in the field of metallurgy at the General Electric Research Laboratory, Schenectady, N.Y. John has been with G.E. since 1946 where he has been engaged in research on the mechanical properties of metals and the transformation of alloys through heat treatment. Before joining G.E., John worked with the National Research Corporation in Boston on the treatment and handling of metals in high vacuums and did graduate work at M.I.T. The final note of the month concerns Thomas R. P. Gibb, Jr., who is the first appointee to the newly created position of director of sponsored research in chemistry at Tufts College. Tom received his doctorate with us, and between 1940 and 1946 was, successively, teaching fellow, instructor, and assistant professor at Tech, and then spent five years as research director at Metal Hydrides. As a closing reminder, don't forget to write to Al in '52. This especially includes Hap, whom I am still waiting for to make good his New Year's resolution.

— ALVIN GUTTAG, *General Secretary*, 7114 Marion Lane, Bethesda 14, Md.
MARSHALL D. MCCUEN, *Assistant Secretary*, 626 Kensington Road, East Lansing, Mich.

• 1941 •

Taking over the class notes column as a new secretary is somewhat like becoming a new father: The offspring is very much alive and demanding attention, and father is a little nervous about the whole affair. The analogy goes only so far, however, for our column is hardly an infant but a well-developed young fellow going on 11 years old. For this initial development, we all owe a tremendous vote of thanks to our secretary "emeritus," Stan Backer. To keep up with the comings and goings of a class over any period of 10 years is quite a job, and to it were added all the hectic days of the War and the unsettled years of the peace. Stan has not only kept us up to date on the news but he was also involved, to no small degree, in the success of our 10th reunion last June. It was at his suggestion that Reid Weedon was appointed reunion chairman, and, after Reid was called to Central America on business, Stan himself took charge of reunion plans and operations. Those who attended know what an excellent job both men did. Stan was further instrumental in obtaining Reid's services as class agent, and those of Rogers Finch as class representative to the Alumni Council.

However, all of these activities have taken considerable amounts of time and energy for 11 years, a long time in anyone's language; and when Will Mott asked me to take over, I accepted mainly because I felt that Stan, having done an outstanding job, deserved the relief. Following in his footsteps will be a tall order, and I'm asking all of you to help out by dropping me notes from time to time on any activities of your own or of other '41 men that you know of. It won't take you long, and the column will be just that much more lively and personal.

Reid Weedon has sent me the combined report on reunion activities, as submitted by his committee members, but neglected to tell of the time and money he spent on his own looking over possible reunion sites all around southern New England, dickering with the owners over services and rates, and directing committee activities in the planning stages. Hank Avery's story on class statistics has already appeared in the February issue of The Review. Rog Finch took charge of entertainment, including leading the singing at the banquet and running the horse races between dance numbers. Ray Harper, as many of you saw, had charge of publicity and mailings and acted as toastmaster at the banquet. Arrangements for the banquet and the dance, including souvenirs and favors, were all capably handled by Ed Marden. Anyone who has ever had responsibility for a similar function can appreciate the size of Ed's task, complicated as it was by the fact that all arrangements prior to the reunion had to be handled across a distance of 140 miles. John Sexton, assisted by excellent weather, took over the entire sports program, which included golf, tennis, softball, bridge, and special exercises in bending of elbows. Dave Howard acted as treasurer, and reliable sources have it that the 10th reunion actually came out in the black. All the above-named individuals gave generously of their time and effort before, during, and after the reunion, and their work was appreciated by all who attended.

Officially, the affair began with the arrival of Stan Backer, John Sexton, and some 48 other early birds on Friday. Each party, on arriving, was checked in for his room and given a name tag and a schedule of events to come. Saturday morning the remainder of the crowd arrived and groups formed for golf, sight-seeing, tennis, and talking over old times. To the best of my knowledge, no one arrived without being welcomed by several others. A few were able to attend for only a short time, but the arrangements were flexible enough to accommodate all. On Saturday afternoon, Boston and New York contingents tangled at softball, with the owner and manager of the Curtis Hotel doing the umpiring (apparently he was the only one to be trusted with this delicate assignment). The Tech electronic computers are still struggling over the score. Later, many of us enjoyed a cocktail and social hour, and at 7:00 P.M. we all gathered for the banquet. The group re-elected Will Mott for another five-year term as president, in accordance with the class constitution, which was also accepted. After dinner, a photograph was taken of the 116 people present (which included 50 wives). Copies of the picture (approximately seven by nine inches) will be available from the Secretary at a cost of around $1.50 — the actual figure will be published next month. A list of those present, keyed to this picture, is published at the end of this column, and com-

plete addresses of all class members are always available on request. An orchestra then played for dancing, with the horse-racing movies being shown at intermissions. Special thanks are due Warner Knight, head of the Richard Hudnut organization in Los Angeles, who sent a cosmetic kit for each of the ladies. Warner would have been the most popular man present had he been able to come. On Sunday morning, the sight-seers were taken on a guided tour of the area by a local resident, returning in time for dinner. To quote John Sexton: "The entire week end was an overwhelming success as far as everyone was concerned — a very surprising success, I think, in the minds of many who thought that it was impossible for a group of M.I.T. 'brown-baggers' to get together and have a good time socially." Well put, John.

Those present (listed according to position in the class picture) were as follows: Front row, left to right, Clayton and Karlyne Baer, Howard and Bobbie Samuels, Joseph Dietzgen, Jack Kriz, Norman Karasick, Marion Hustvedt, Barbara Karasick, Erling Hustvedt, Roger Blum, Phillip Lewis, Penny Fykse, Sue Lewis, Lewis Fykse, Dion Macleod, John Macleod. Second row: John Sanderson, Kirke Marsh, Gardner Ketchum, George Farnell, Thayer Rudd, John Murdock, Carlton Stewart, John Wallace, Willard Mott, Edward Marden, Stanley Backer, Raymond Harper, Henry Avery, Rogers Finch, Lester Gott, Alan Surosky, George Palmer. Third Row: Dottie Kussmaul, Peggy Sanderson, Rusty Ahrendt, Priscilla Marsh, Marion Ketchum, Ruth Farnell, Marge Rudd, Janet Murdock, Marge Stewart, Agnes Wallace, Luis Jiminez-Michelena, Charlotte Mott, Bea Millen, Esther Backer, Peggy Harper, Mary Ruth Avery, Marge Smolka, Barbara Finch, Alice Gott, Lois Moody, Phyllis Polivnick, Leonora Surosky, Evie Hooper. Fourth row: William Kussmaul, William Folberth, William Ahrendt, Jean Folberth, William Cherry, Walter Kreske, Isabel Berman, Peggy Joyce, Marian McGuire, Dorothy Gavin, Beth Storm, Marge Sexton, Marie Hasert, Phyllis Hunt, Marge Gabel, Muriel Norden, Dorothy Williams, Adele Shapiro, David Shapiro, Irving Stein, Chester Hasert, Peter Smolka, Pat Cherry, Carol Demartini, Robert Demartini, Herbert Moody, Norton Polivnick, William Hooper. Rear row: James Thornton, Chester Corney, Johan Andersen, John Stern, Teddy Walkowicz, Arthur Weinberger, Ivor Collins, Lloyd Perper, Irving Berman, Paul Joyce, Milton McGuire, Joseph Gavin, Frank Storm, John Sexton, Ralph Hunt, Herman Gabel, Monroe Norden, Robert Williams, Larry Howard, David Howard, Doris Ferris, Theodore Ferris, Helen Tirrell, Stanley Tirrell, Lu Bowes, William Bowes, Virginia Bowman, Joseph Bowman, Eleanor Smith, Robert Smith.

Attending Alumni Day at M.I.T. the following day, Monday, June 11, were: Herman Affel, William Ahrendt, Johan Andersen, Stanley Backer, Clayton Baer, Robert Bailey, William Baldwin, Raymond Berry, Joseph Bowman, William Cadogan, Leslie Corsa, Michael Driscoll, William Folberth, Theodore Ferris, Rogers Finch, Lewis Fykse, Herman Gabel, Carl Goodwin, Chester Hasert, Edgar Hayes, William Hooper, Sterling Ivison, Lewis Jester, Luis Jiminez-Michelena, Charles Jones, Raymond Koch, Walter Kreske, Samuel McCauley, James Mar, Edward Marden, Robert Meier, Howard Morrison, Willard Mott, John Murdock, Monroe Norden, Carl Olson, Howard Samuels, Charles Sauer, John Sexton, Peter Smolka, Herbert Stein, John Stern, Carlton Stewart, Frank Storm, James Thornton, Lawrence Turnock, Teddy Walkowicz, John Waller, Arthur Weinberger, and Robert Williams. — IVOR W. COLLINS, *General Secretary*, 98 Washington Street, Marblehead, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1947 •

By the time these weighty words come before you, reunion week end will be just about a month off, and I hope that this will be the final impetus for all of you recalcitrants to get on the wagon — band, or otherwise — and join us out at the Cliff Hotel in North Scituate for a day or two of joyous carousing and carefree reminiscence. To those who, like Pedro Picornell, are too far away, we can just say, "Wish you were here." Pedro writes from Manila: "I am married and have a son, born in October, 1951. At present I am a senior engineer with San Miguel Brewery, Inc. Made a business trip to the United States last year, and happened to be in Boston the last week end of July. Sorry I missed you all."

Hank Sandler is similarly unable to be with us because of expanses of ocean; but he makes up for his absence with a pleasantly long letter, addressed from 24 Margaretta Terrace, Chelsea, London S.W.3. Writes Hank: "Thanks for your reminder regarding the reunion. As you can see from the postmark, I am a long way from Boston, and will be next June, so the reunion is out for me. Incidentally, I vote for non-stag events in the future, as I'm sure there must be many happy married fellows by now who enjoy vacations with their wives. I don't think I ever brought you up to date on my activities, so here goes. After getting my S.B. from Tech, I took the Course X Practise School Course, and got my S.M. in 1948. I went to work for Atlas Powder Company in Wilmington, Del., as a chemical engineer in the research and development section of the semi-works department. In October, 1950, I married Rhoda Fishman of Jenkintown, Pa. In July, 1951, I received a leave of absence from my company, and am now in London with my wife doing research at the Imperial College of Science and Technology. That about does it for a thumbnail sketch of the past four years. For the present, my wife and I are living in the 'arty' section of London, and are enjoying the academic life, and shows, concerts, ballet, and opera of London to the fullest. Are there any others of the Class in the neighborhood?"

Further regrets about inability to make the great 1947 conclave have been received from Lieutenant (j.g.) George Katz. From the U.S.S. *Hugh Purvis*, George writes: "I have read in recent issues of The Review about the great reunion planned for our Class this coming June, and it is with sincerest regret that I report I will be unable to attend. It appears that the organization with which I am presently connected deems it necessary for me to be thousands of miles away at that time. I've been in the Navy now since September, 1950, and after about a year aboard the battleship *Wisconsin*, I was transferred to this bouncing bucket of steel (better known as a destroyer), where I'll probably be retained until my release this coming September. However, all things being equal, and assuming the number of multivariables of this complex international equation become reduced to their lowest degree, I anxiously anticipate the next reunion."

The midwinter alumni meeting in Walker provided an opportunity for talking with some little-seen classmates. Art Schwartz drove up all the way from New Jersey for the event, pouring forth enthusiasm about the June week-end plans. Art is with the Kleenstik Company, and left some samples of his wares with me. Jim Bagnall was also at our table, together with Jim Phillips, Harl Aldrich, and Dick Knight. A brief note from Arnold Varner tells us that he is now a plastics engineer with the General Electric Company's Household Refrigerator Department at Erie, Pa. He was previously with the Pure Oil Company as a refinery engineering student. He married Vera I. Boswell in October, 1950.

Social and other notes from all over: Harry Donald has taken a position with Dewey and Almy Chemical Company as a design engineer after spending some time at Beloeil Station, Quebec. Mary Frances Penney, one of the brighter lights to emerge from the Chemistry Department, has been promoted to assistant professor of chemistry at Smith College. Mary sports a D.Phil. degree from Oxford University. Not too long ago, Ed Bennett, electrical engineer turned psychologist, presented a lecture as part of a series at the First Universalist Church in North Attleboro. Ed, who is an assistant professor of psychology at Tufts College, spoke on "Getting Along with Our Children." Joe Profita has joined the staff of Methods Engineering Council, management consultants in Pittsburgh, where he will specialize in market research and product diversification studies. Since 1947 Joe has been market research manager for New England Coke Company, and has been teaching sales and market research in the evening college of business administration of Boston University.

Our city planners have been in the news of late. Herbert Wieland has been appointed city planner of Manchester, N.H., in which position he will engage in a slum clearance program, in close association with the Manchester Housing Authority. John Blackwell is professional planning counsel for the Town of Needham; and Alan McClennen has been appointed director of development and redevelopment of the Cambridge Housing Authority. Finally, William Froehlich was appointed executive director of the Public Parking Authority, Pittsburgh, Pa. Hardly a social note, but very much headline material, was the near-serious accident involving a Northeast Airlines Convair

Liner at LaGuardia Airport last January. One of the unfortunate passengers was Jordan Baruch, now an Assistant Professor of electrical instrumentation at Tech, who happily emerged unscathed.

Two engagements of last winter have come to light – those of Bill Wiehl and Edythe Hall Jarvis of Fairfield, Conn.; and Bill Hunt and Janet Randall Marsh of Pittstown, N.J. Weddings to report are those of Vince Goddard and Patricia Bailey of Marion, Ind.; Bill Graw and Kathryn Ann Pflueger of Miami, Fla.; Ed Moore and Elizabeth Jean Weichel of Belmont; Walt Kulesa and Sue Carol Walker of Opelika, Ala.; Mal Burr and Louise Alice Nyberg of Ansonia, Conn.; and Russ Johnston and Ruth Alice Phillips of Somers, Conn. Ruth was formerly class notes editor of The Review. – CLAUDE W. BRENNER, *General Secretary*, Room 33-316, M.I.T., Cambridge 39, Mass.

• 1948 •

No news may be good news to some; but certainly not to your Secretaries who try to keep you informed of '48 doings. A letter from your Class Prexy, Dave Cist: "I was in Boston recently and only ran into a few men – Big Ben Brettler, looking happy and as if he'd lost a good deal of weight (still looks as if he could give a darn good account of himself if the need arose); Norm Daggett'47 who seems to be in charge of keeping the electrons in their orbits in one of the M.I.T. research projects. I gather his is a darn responsible job which he is carrying out ably, naturally. I'm still with Du Pont in West Virginia (Belle Works). There is quite a large number of M.I.T. fellows here in the Valley; in fact I board at a house with two others. However, I don't believe there is a single classmate among the group. My work started out to be in instrument development and automatic process control. I worked at that for about two years, all told, and was sent down to one of our Texas plants to install one of the gadgets we developed in their arrangement there. For the past year and a half, I have been doing power electrical engineering in the maintenance end of things." With regard to Uncle Dave's marital status, he reports: "I've not done much progressing to talk about though I'm still trying manfully."

A letter from Pete Spitz in New Rochelle: "That 'sit right down – yes, right now' finally got me, and so here, to my very great embarrassment, is my first letter. It's so interesting learning about all the other people that it seems only natural that one must also supply reading material at times. [Ed. note: Amen!] I have been working with Standard Oil Development Company since getting my S.M. in '49. Most of the time has been spent in control of processes, with some design and field-test work thrown in. We have a big construction program under way in different parts of the world and there's lots of engineering to be done. My marital status is still, ahem, single. How about some statistics? Some bishop in Ireland recently said that too many men these days are too lazy and selfish to assume the burdens of married life – while pretending to be unlucky and rejected. That ought to provide some lively discussion. News items: Leon Brettler is now working for Du Pont at the new A.E.C. plant in South Carolina; Hal Field is through with Yale Law School and is working in New York. Stan Fingerhood is with Sperry Gyroscope, making aeronautical control equipment." Thanks, Pete.

Class members who, during the early months of 1952, became the "Mr." half of "Mr. and Mrs." included George Hossfeld who was wed in May to Mary Jo Van Hoesen, an alumna of Wellesley; Jack Walter, a sales representative for the Robert Gair Company in Natick, Mass., to Jean Davis, a Lasell graduate; Lincoln Richardson to Katherine Wood; and Lieutenant Colonel John Minahan, a West Pointer who received his master's with us, to Jeanne Murphy.

Way down in Fort Bliss, Texas, is Lieutenant Joe Luceri, who is currently attending an electronics school for guided missiles. Before entering the service, Joe was employed by the General Electric Company as an electrical engineer. Bill Hildreth is currently teaching at the Air Force Meteorological School at Oklahoma A. and M. He married Peggy Bassett of New Orleans, January 24, 1950, and has a daughter, born September 25, 1951 – Eleanor Bassett Hildreth.

Finis. – WILLIAM R. ZIMMERMAN, *General Secretary*, 1604 Belmar Road, East Cleveland 18, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, Lovell Road, Holden, Mass.

• 1950 •

The Class of '50 was very well represented at the Alumni Association's midwinter meeting of January 31. I couldn't persuade the Army to give me the day off and, as a result, I didn't make the meeting myself, but I just received Bob Mann's report of the night's activities and, more important, a report on the activities of the '50 men who were present: "Frank Parisi was present and he is still working for an electronics organization. He has a home in Waban and now boasts three children. Charlie Levy is married and now works at the Watertown Arsenal. Jay Bedrick was invited into the Air Force as a result of his R.O.T.C. training and received a very fortunate assignment with the Albany Street Field Station in Cambridge. Even more fortunate, he has been assigned by that station to servomechanisms development work at Technology and looks like a civilian, as he is currently attending classes at the Institute in addition to his Air Force work. George Twitchell is still with Dewey and Almy and reports that everything is going well. Mike Fitzmorris continues on at the Servomechanisms Laboratory and is soon anticipating the move from his present Westgate apartment to his new home in the M.I.T.-Harvard co-operative housing group out in Concord. Mal Green did not stray far from Technology after getting his master's last June. He is located right across the street with Ruge-deForest. Jim Staikos reports that he and Frank Ruccia are still happy with Monsanto, and that Frank's wedding plans are progressing. Art Govatsos is doing mechanical design work with the Polaroid Company in Cambridge, and has bought a house in the Newtons somewhere. Others present included: Roger Bond, Paul Berger, Melvin Braverman, Kunli Chu, William Clemons, Paul Egan, Ken Fertig, Fair Finnie, Donald Fritch, Richard Granke, Donald Gray, Craig Gustafson, John McHugh, F. E. Poirier, Cyril Reece, Lindsay Russell, Jacob Shapiro, Lester Smith, M. Walker Wallace, and Tony Wetmore. All in all, the meeting was a resounding success."

The majority of this month's news concerns men in the service so we'll cover that first. Lieutenant Commander Donald Armstrong is now living in Arlington, Va. Royden S. Bair is in Uncle Sam's Army. Lieutenant Ed Berninger is at Killeen Base in Texas. Captain Ernest Braucher is with the Department of Physics and Chemistry at the United States Military Academy, West Point. Lowell P. Daniels has been promoted to the rank of commander. Ed Fox has been promoted to a lieutenant, and Henry Gerdes is now Lieutenant Commander Gerdes. Lieutenant Samuel Heller is with the U.S.N. Bureau of ships in Washington, D.C. Lieutenant Richard Ingalls is stationed at the Evans Signal Laboratory in Belmar, N.J. Richard Koenig has added a lieutenant to his name, as has Herbert Limmer. Herb is at Pine Camp, N.Y., with a Signal Service battalion. Charlie MacDowell has gone Navy and added ensign to his name. Lieutenant William Dave Mohr is at the Chemical School, Ft. McClellen, Ala. Lieutenant Ed Pershe is with a medical group depot somewhere overseas. The Army finally caught up with Paul A. F. Mourier-Petersen. It is now Private Paul at the Chemical Center in Maryland. Lieutenant Robert Randall is working at the Aberdeen Proving Grounds in Maryland. Corporal Allan Rock is at the Suffolk County Air Force Base on Long Island. Lieutenant Commander A. H. Sallenger now is at Norfolk, Va. Ensign John R. Thomson is at the Naval Air Station, Quonset Point, R.I. Joseph Volonte is now a lieutenant commander. Ensign Warren Watters is at Coronado, Calif. Lieutenant Robert Wohler is with the Petroleum Depot Company somewhere in the Far East Command. Mike Celentano and Jim Turner are both at the Engineer Officers' Candidate School here at Belvoir. And last, but not least, as far as service news goes, is a letter I received from Marty Cornish. He's now taking infantry basic training at Fort Knox, Kentucky, and to bring you up to date on his activities since graduation, I quote: "Boy, this is really it after the life I was living. After leaving Tech, I went down to good old Mexico and spent a short vacation. Then I went to work (???) in the largest brewery in Mexico. Yes, beer – loads of it. We wasted in one day enough to get drunk for life." But Uncle Sam intervened and Marty is now a happy foot soldier.

Rene Margaret Grinnell and Harold Thomas Wilson were married on February 2, and, after a wedding trip to Bermuda, they settled down in Virginia. Josephine Drake Wyatt and Herbert Arthur Ridgway were wed in February and now are living in Niagara Falls, N.Y. Joyce Mills and Robert Sumwalt announced plans to be married on March 8. He is associated with Du Pont Company in Camden, S.C.

A few more young'uns to report: Jean and Phil Byrne announce the arrival of Philip Joseph on February 4, 1952. A husky eight-pound, 10-ounce bundle of joy. Although I'm missing the vital statistics, I did find out that the Ken Olsens are now the very proud parents of a baby girl.

Howard Graves is busy building things again in his spare time. This time he's come up with a harpsichord. The project has been a three-year part-time job. Not only has Howard (who holds down a full-time job at Delco) joined the ranks of the world's handful of harpsichord makers, but the young amateur also has built what is believed to be the first one with a welded aluminum frame. This will increase tone and mechanical stability, he believes. Other modern harpsichords use cast aluminum. His harpsichord is being used for various concerts in Rochester.

William Barcus is studying at Oxford University in England. George Spaulding is now with the Lipton Tea Company in Hoboken, N. J. Whitty Whitman is at Infantry Officers' Candidate School at Fort Benning, Ga. Ramon Suarez is a sergeant in the Soil Mechanics Laboratory here at Belvoir. He was married a while back and is living in Alexandria, Va. Jack McKenna and Dot Mahoney have set May 3 as the hitching date and, by the time this is in print, they should be married. J. T. Weaver has also decided that he's reported enough of other people's weddings and it's about time he took the leap himself. So come June 14th, Miss Ruth Mullowney will become Mrs. Weaver.

Don't forget Alumni Day, June 9th. Start talking to your boss or your commanding officer for permission to have the day off. – JOHN T. WEAVER, *Secretary*, 1772 East Tremont Avenue, Bronx 60, N.Y.

• 1951 •

It is my sad duty to report the untimely death of C. O. Maddox. He was only 22 years old when he died from spinal meningitis on February 14, 1952. C. O. was born March 15, 1929, in San Antonio and had lived most of his life in McAllen, Texas. He graduated in 1946 from McAllen high school, where he was valedictorian of his class. He attended New Mexico Military Institute for two years and then transferred to M.I.T., where he took up Chemical Engineering. Upon graduation from Tech, he began work in the engineering department of the Celanese Corporation.

Clint Seeley decided to take time out from his medical duties to give us some news about '51 men. He says: "I have been meaning to report in on what bits of information I have on classmates for some time. Your expression of surprise regarding three '51ers in med school has precipitated this note. There are at least six of us looking for an M.D., and as far as I know every Tech man in our Class who applied was accepted. Norm Telles is at Boston University med school and writes that he is also doing some lab work at Boston City Hospital and is even occasionally 'scrubbing in' on a few operations. I'm at the University of Rochester Medical School." Clint adds: "Marriages among classmates include: Bill Cox to Virginia Blair in June, 1951; Fred McCauley to Priscilla Whittemore in June, 1951, at West Hartford, Conn.; Chris Rust to Dorothy Harrell in Coronado, Calif., in June, 1951; John Thomas to Marjorie Norwood in Toledo in October; and Fred Fead to Willie Wolter in Boston in January, 1952. Incidentally, Fred is a lieutenant at Ft. McClellan, Ala. John is also a lieutenant (recalled from pre-M.I.T. duty) and is now in Bavaria. The whereabouts of some of the bachelors is just about as far-flung. Lieutenant By Burch is back in uniform, though I don't know his present whereabouts. Harry Wolf is in Saudi Arabia with Arabian American Oil Company; and Al Fonda is with G.E. and is oscillating between Erie and Pittsfield for them. Roy Sachs is working on a Ph.D. at Cal Tech; however, his most recent communication tells of a good possibility of a Fulbright Fellowship in New Zealand. If he got it, he's 'down under' by this time." Thanks, Clint. By the way, Clint wants everyone to know that the welcome mat is always out. His address is: 231 Brooks Ave., Rochester 11, N.Y. I might add further that Clint was recently admitted to student membership in the Connecticut State Medical Society.

Here is more news about classmates who have become engaged or married recently. Among those engaged: George Collins to Kathleen Sexton of West Newton; Hank Curtis to Grace Thiele of Irvington, N.J. (Hank is working with Gibbs and Cox, Inc., Naval architects of New York); Burt Dempster to Ellen Hilles of Germantown, Pa., with plans for a summer wedding; Ernest Weating to Elizabeth Schlag of Glenshaw, Pa.; Herb Scher to Marilyn of Dorchester; Hank Helfrich to Lovina Lewis of Baltimore with plans for a July wedding (Hank is at Wright-Patterson Field in Dayton); George Purpur to Colleen Ralph of Laurel, Del.; Paul Buergin to Elinora Pinney of Scarsdale, N.Y. (Paul is employed by General Motors); and Carl Huntsinger to Carolyn Rennick of Alhambra, Calif.

The weddings that have taken place are: Dave Jeffries to Marjorie Shaw in Whitemarsh, Pa., in January; Bruce Culbertson to Carolyn Sammis in Maryland in January; and Earl Gesler to Patricia Eddy in Boston in February.

Word has been received from Hal Siegel concerning his activities. Hal writes: "Am working in Washington's largest private defense plant, Engineering and Research Corporation, located in Riverdale, Md. J. C. Gilmore was inducted in January. Herb Graham is out in California. Ran into George Field in Chinatown; he works at the Naval Ordnance Lab nearby." Gordon Nelson has a new supervisory position with Monsanto Chemical Company at the company's new Plastics Division plant at Addyston, Ohio. John Conley is working as a production manager for Consolidated Trimming Company in New York. John Pasieka is with the Air Force at a base near Fort Dix, N.J.

May I mention a few words about the Alumni Fund? By this time, all of us have received several letters from Fred Weitz, our Class Agent, telling us about the purpose and workings of the Fund. Sooo . . . I won't duplicate Fred's work. But I do want to say that the 1952 Alumni Fund will close on June 30 so there is still time to contribute, if you haven't already done so. Let's keep up the good record of the Class of 1951! Don't forget to mark June 9th on your calendar – that's the date for Alumni Day at Tech. – STANLEY J. MARCEWICZ, *Secretary*, Morris D-34, Harvard Business School, Boston 63, Mass.

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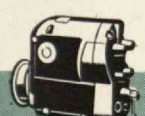
HAULING OUT THE HEAVYWEIGHTS . . . another tough job that demands AMERICAN BOSCH performance

Hustling out the big butts is a mighty tough job — but giant Diesel logging trucks take it in stride. These heavyweight haulers rumble over specially-built logging roads, daily shouldering loads that may scale fifty tons or more. Plenty of dependable power's a "must" — and that's why American Bosch products are on the job.

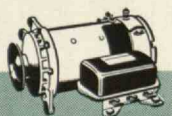
Reliable, precise fuel injection is one big reason for the sweeping success of the modern Diesel engine. And American Bosch has long been the leading supplier of fuel injection systems to Diesel engine manufacturers. That's because American Bosch Diesel injection pumps and nozzles — although built to amazingly fine tolerances — provide long-lived, economical performance in the severest service.

For over forty years, American Bosch has maintained a unique reputation for advanced design, precision manufacture and widespread, thorough service. Continuous research in the automotive, aviation and Diesel fields helps to keep it that way. American Bosch Corporation, Springfield 7, Massachusetts.

AMERICAN BOSCH

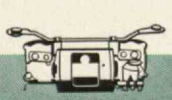


Automotive and Aviation Magnetos



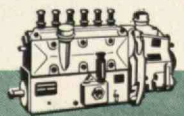
Generators and Regulators

Components for Aircraft Engines



All Electric Windshield Wipers

Ignition Coils



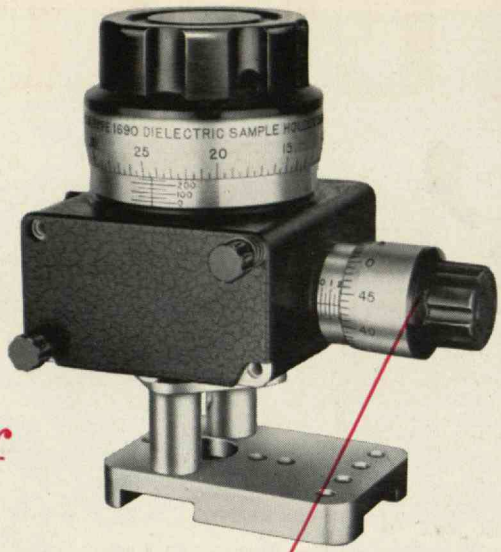
Diesel Fuel Injection Equipment

Measure Dielectric Constant to 500 Mc

Dissipation Factor to 100 Mc

with this **NEW GR**

Dielectric Sample Holder



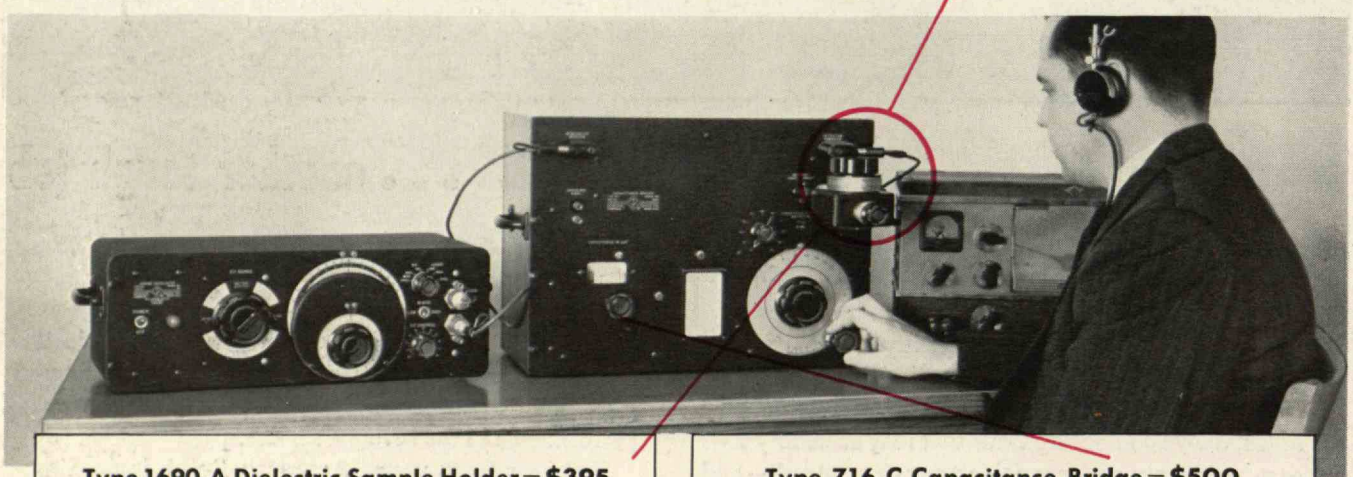
The precise measurement of dielectric constant and dissipation factor over a wide range of frequencies is becoming of increasing importance to users and manufacturers of insulating materials. As the electrical industry makes more use of the higher frequencies, solid materials with increasingly lower losses will be needed. For example, a 2% difference in dielectric constant of a plastic support in coaxial connectors can make the difference between success and failure in the design of units with low voltage-standing-wave ratios.

The new dielectric sample holder is a precision capacitor with a movable top electrode specifically designed for the accurate measurement of solid dielectric properties. This instrument can be used with bridges, susceptance variation circuits and slotted lines to make accurate measurements of dielectric constant and dissipation factor of samples placed between the sample-holder electrodes.

The General Radio Dielectric Sample Holder, used with the Type 716-C Capacitance Bridge, is an ideal combination for precise dielectric measurements at lower frequencies.

The Type 716-C Bridge uses a Schering bridge circuit, widely accepted for measurements of dissipation factor and capacitance; the dielectric constant can be determined readily from knowledge of the capacitance presented by the material in the sample holder.

In making measurements with this bridge and dielectric sample holder, it is merely necessary to balance the bridge with the sample holder and specimen in the unknown arm of the bridge. The sample is then removed and the top plate of the sample holder lowered by turning the micrometer knob until balance is reestablished. The dielectric constant and dissipation factor are readily calculated from the two settings of the sample holder micrometer and the two readings of the dissipation factor dial on the bridge.



Type 1690-A Dielectric Sample Holder — $395

Abridged Specifications

RANGE — *Dissipation factor measurements to 100 Mc: dielectric constant to 500 Mc.*

SPECIFICATIONS — *agree with ASTM D-150 Standards.*

ELECTRODES — *2 inches in diameter — optically flat surfaces within a few wavelengths.*

AUTOMATIC DISENGAGING — *precision-ground micrometer screw drives movable electrode — spring-loaded drive automatically disengages when top electrode seats on sample.*

MICROMETER VERNIER — *capacitance readings can be made to within 0.004 μμf; makes possible great accuracy in susceptance variation measurements.*

Type 716-C Capacitance Bridge — $500

Abridged Specifications

FREQUENCY RANGE — *operating frequencies between 30 cycles and 300 kc. (The new Type 716-CS Capacitance Bridge permits measurements from 1 to 3 Mc)*

ACCURACY — *dielectric constant measurements can be made within 2%, with the Type 1690 sample holder. Loss measurements on materials with dissipation factors as low as .0002 can be made with an accuracy of ±.00005. Accuracy of measurements of material with higher dissipation factor approaches ±2%.*

SHIELDING — *bridge arms, dissipation factor capacitors and shielded transformer are all fully shielded.*

GENERAL RADIO Company

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